Modern packaging

Nominated for *Packaging's Hall of Fame*. Story on Page 76

July 1951

● *"you name it...I helped make it!"*

Glue that plans our defense

What helps to develop new ideas? Glue! Resin wood glue. Used everywhere from foundry patterns to pencils. Look at a pencil. It's made of two pieces of wood. A length of "lead." An eraser. All glued together. Next, walk through a pattern-making shop. Resin wood glue again! Moisture-resistant. Fast setting, in minutes, not hours. Non-abrasive so that knives and saws won't dull. Strength stronger than wood.

. . . where else is resin wood glue used?

● *"you name it . . . I helped make it!"* What's a drawing board? Wood glued edge-to-edge. And end-locked. With glue lines as soft as the wood. No hard ridges. Look at engineers' scales, slide rules, drafting tables, desks, office partitions and doors. The NATIONAL touch is everywhere. Glue applied through imaginative research and service. To every item of defense.

STARCHES **National** ADHESIVES

NATIONAL STARCH PRODUCTS INC.

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SOFT SEAL permits cartons to be opened far more easily than conventional case-sealing glues.

SOFT SEAL comes ready-for-use. For all types of corrugated and fibrous cardboard stocks. Sets fast. Machines beautifully.

We'd like to seal some of your cases with SOFT SEAL; and some with your present glue. Then have you open both. *Or, we'll send you a trial drum.*

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A corrugated or solid fibre shipping case is only as efficient as its seal. Suppliers of these containers have made numerous structural improvements to give your products added protection against the hazards of shipping, but losses continue because many shippers still use sealing methods and materials which are outmoded or ineffectual on the majority of case stocks manufactured today. Carriers estimate that containers lose at least 50% of their value unless the bottom and top flaps are properly sealed.

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New York 16, N. Y.

I'M INTERESTED IN:

- ☐ A SOFT SEAL demonstration in my plant.
- ☐ A trial drum of SOFT SEAL.
- ☐ A copy of National's Successful Case-Sealing Booklet.

Mr. _____

Company _____

Address _____

City _____ Zone _____ State _____

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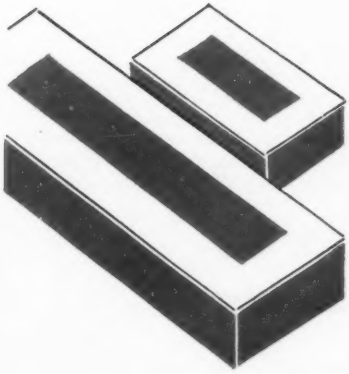
thanks to GAIR MULTICOLOR CARTONS

GAIR multicolor cartons are winning enthusiastic acclaim everywhere with dealers, consumers and manufacturers.

These smartly designed multicolor cartons are solving packaging problems for many manufacturers who are as meticulous about their packaging as they are about their famous products.

Sales, profits and prestige are increased with the SELL-ON-SIGHT appeal of GAIR multicolor cartons.



WRITE TODAY for samples and technical information

ROBERT GAIR COMPANY, INC., 15[illegible] EAST 44th STREET, NEW YORK - TORONTO

PAPERBOARD • FOLDING CARTONS • SHIPPING CONTAINERS

Modern packaging

Vol. 24 No. 11 July 1951

General

QM packaging—1951 59
Feeding and sustaining our Armed Forces is now the biggest job in packaging; here's what the Quartermaster Corps is doing about it.

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Flexible tube-filling lines 68
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By taking foil off film rolls and using it to seal hermetically three rolls in a carton, it boosts sales as much as 115%.

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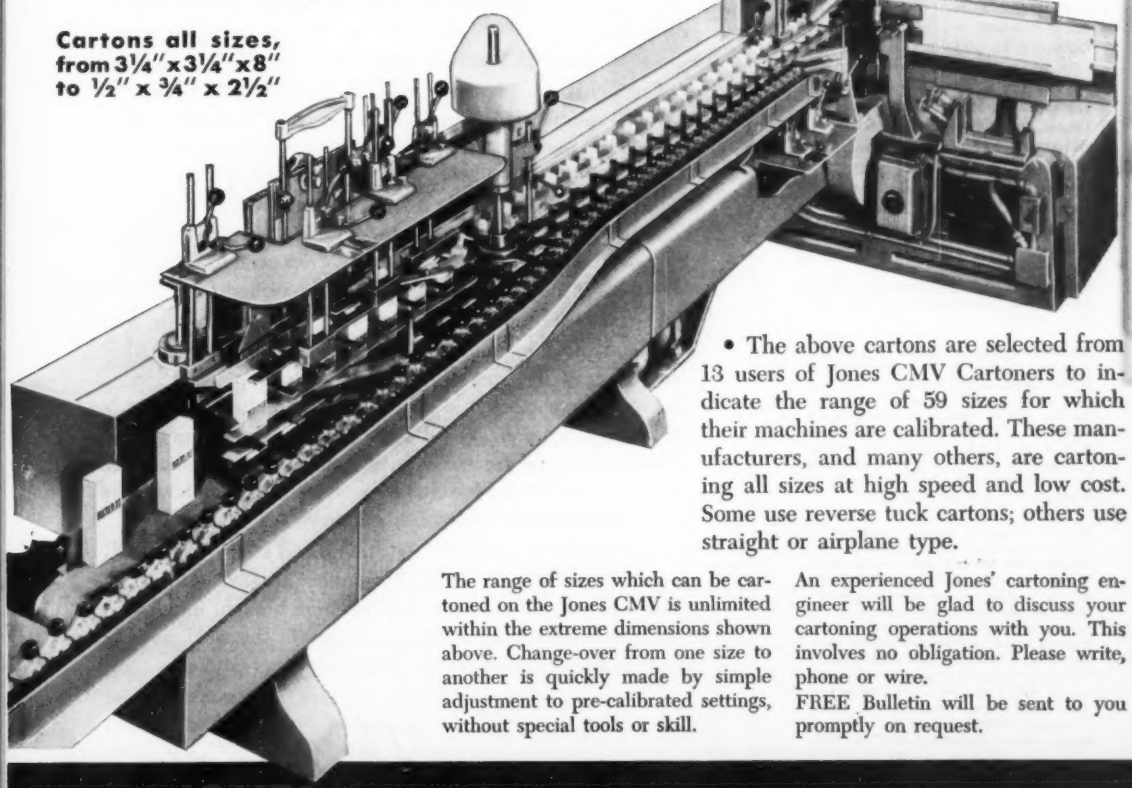
CIRCLED FIGURES indicate the number of different carton sizes which the user is cartoning on JONES CMV machines.

JONES CONSTANT MOTION VERTICAL

cartons 59 sizes for these typical users!

Cartons all sizes, from 3¼" x 3¼" x 8" to ½" x ¾" x 2½"



• The above cartons are selected from 13 users of Jones CMV Cartoners to indicate the range of 59 sizes for which their machines are calibrated. These manufacturers, and many others, are cartoning all sizes at high speed and low cost. Some use reverse tuck cartons; others use straight or airplane type.

The range of sizes which can be cartoned on the Jones CMV is unlimited within the extreme dimensions shown above. Change-over from one size to another is quickly made by simple adjustment to pre-calibrated settings, without special tools or skill.

An experienced Jones' cartoning engineer will be glad to discuss your cartoning operations with you. This involves no obligation. Please write, phone or wire.

FREE Bulletin will be sent to you promptly on request.

R. A. JONES & COMPANY, INC.

Cartoning Machines — Soap Presses

P. O. BOX 2055
CINCINNATI, OHIO

Modern packaging

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How much?

HOW MUCH OF WHAT can we count on when? That is the question that is bothering buyers of packaging as they attempt—as they must—to look six months or more ahead.

They have found that an "M" order, which spells out limitations on end use of critical materials in definite terms, can be a dangerous illusion. It provides a ceiling, but no floor. If the order says that users of cans for a certain product are "limited" to 75% of the cans used in a certain base period, it implies an assurance that that 75% will be available. But such is not the case.

There is at present a big gap between the M-order allowances and the available supply of can plate. The M-25 can order quite logically requires the can companies to take care of essential users first, then split up the remaining supply equitably among all non-essential users.

The remainder of plate available in the second quarter for non-essential users was sufficient, in many cases, to meet only 60% *of the M-25 "limitation"*— and that, in the case of a 75% limitation, is only 45% of normal requirements.

But the real nub of the trouble is the fact that there is nothing fixed or predictable even about that level. Based on the uncertain supply of plate, it may drop even lower next month—or it may jump all the way to the ceiling.

The necessity for limitations on such critical materials as steel and tinplate cannot be questioned. The non-essential user of cans is, from the last previous unpleasantness, thoroughly experienced in substitutions and alternates. But substitution requires careful advance planning; it can't be turned on and off from month to month. A 100% denial, a clear-cut requirement for change-over, would be preferable to the present hand-to-mouth uncertainty.

Time certainly is required to tune up and adjust the ponderous machinery of national materials controls, but we think it is time now that can controls were brought into line with can plate supply, giving packagers in this field some positive, if restricted, basis for operation.

The Editors

READY *FOR ANY EMERGENCY*

Surgical, medical and essential food supplies for military or civilian use are available instantly when protected in these typical packages of Dobeckmun Metalam*. Hundreds of laminated combinations of foil, film and paper are identified by the Metalam trade mark. Such permanent, metal-clad protection keeps vital drugs, foods and chemicals safe and sterile under any conditions of climate or weather.

Metalam is adaptable to high-speed, automatic packing machinery. Heat-sealed packages can be sterilized in autoclaves—after filling. Metalam's long-time, completely protective qualities have been proved in literally billions of packages.

Although supplies of Metalam are limited by military requirements, we shall be glad to work with you in your long-range planning. Or . . . perhaps some type of transparent film will better suit your needs.

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*Trade Mark

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Pneumatic

PACKAGES THEM ALL

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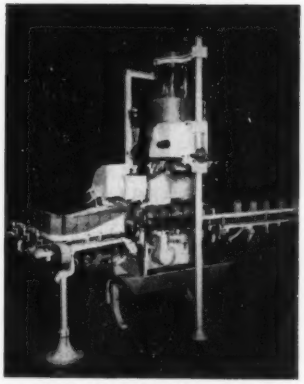

Two Scale Cone Feed Weigher — specially designed unit for handling prepared flour mixes.

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a Thatcher FASTPAK machine

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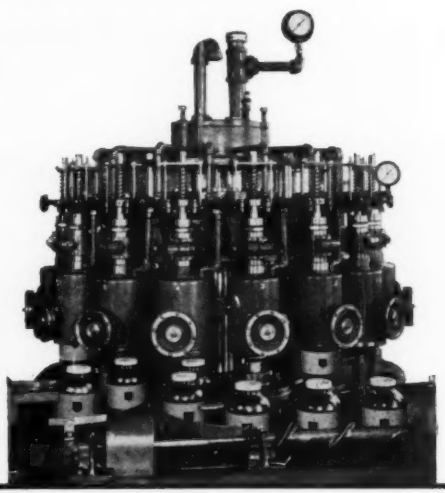
Thatcher's FASTPAK maintains a constant flow of production at as fast or as slow a speed required—up to 150 units per minute! FASTPAK will process continuous thread glass from 4 to 7 inches in height. Jars are fed in on a straight line metal top conveyor and discharged by a plain rotary disc, to which a take-away conveyor may be added. Both delivery and discharge may be made through a range of 180 degrees.

Here is an opportunity to prepare your company against possible future shortages. Remember, only a few of these vacuum packing machines are available. Write, wire or phone Thatcher Glass now for complete details and costs!



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Department MP, Elmira, N. Y.

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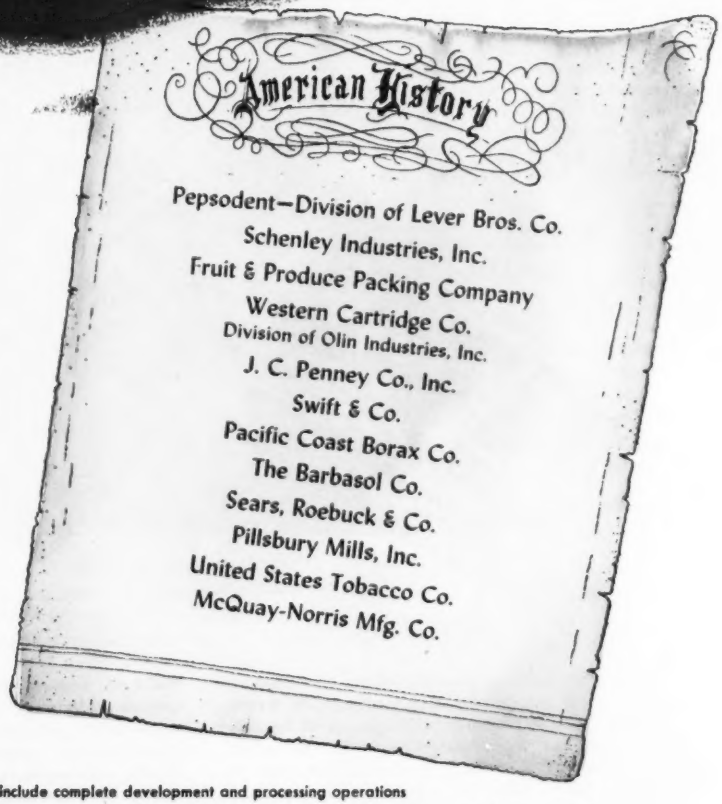

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in TRI-STATE *Rigid Plastic Boxes*

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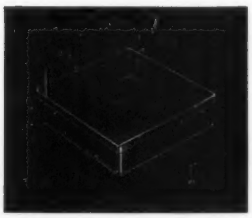
Our stock boxes No. 62 (5-1/4"x 5-1/2"x1-1/2") provide the Pascall Old English Sweet package with a bonus in triplicate. And for every packager of confections, dairy products, foods—class or mass merchandise of any kind—there's a Tri-State Rigid Plastic Box to fit your product, build your sales, simplify packaging operations. If we cannot fill your needs from our wide variety of stock sizes and shapes, we'll mold to your specifications.



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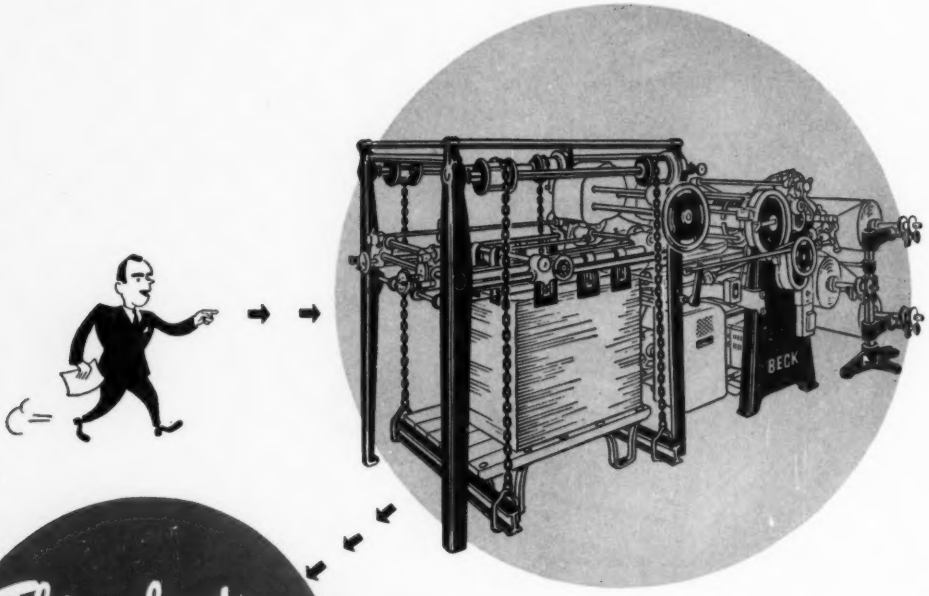

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** Meets specifications under JAN-B-148; has many applications as a greaseproof intimate wrap in place of Grade A greaseproof barrier material under JAN-B-121.*

A

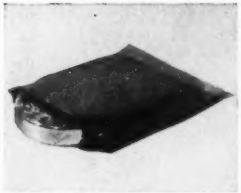
B

FOR METHOD 1A-1 After cleaning and preserving, wrap part in proper gauge of foil. (See illustration A.) Then dip in approved wax dip coat sealing compound and allow to cool. (See illustration B.) Identify by standard methods, and overwrap with approved material, or pack in box or carton.

FOR METHOD 1A-2 After cleaning and preserving, wrap part in proper gauge of foil. Insert in set-up box, or carton. Then wrap carton in approved Grade C self-adhering material and dip in approved wax dip coat sealing compound. Identify by standard methods and overwrap with approved material.

SPECIAL ADVANTAGES...1. In Method 1A-1, the foil reinforces and strengthens the wax coating used in dipping irregular shaped items, and does not absorb the preservative, or the coating. 2. Gives positive moisture-vapor protection, especially if drug store fold is used. Both wax dip methods shown give highly satisfactory results and are very economical. Reference: "Spec. JAN-P-116 Preservation, Methods of."

OTHER BARRIER MATERIALS



AR-61, AR-63, For Bags, Interior Packaging. Foil on kraft material. Greaseproof, waterproof and moisture-vapor proof. Meets specifications set forth under JAN-B-121 and JAN-P-117.

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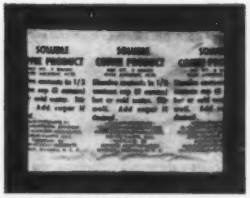

Acetate-Bonded Aluminum. Pliable, printable, fills and forms easily on most high-speed packaging machines. Takes a very firm, impenetrable heat seal. Moisture-vapor and light proof. Holds flavor.

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ADDS DISTINCTION AND QUALI

Blue acts as a powerful Advertising, Merchandising and Selling Tool

Is your package merely a container? Or does it perform double duty as a container and a salesman? Many famous brands have turned to Maryland Blue Glass for packaging that excels in *both* vital functions. Blue enhances your product and says, "Buy Me!" So follow the lead of many famous brands . . . pack to attract in Maryland Blue Glass. Write today for samples.

Maryland Glass Corporation • Baltimore 30, Maryland

PACK TO ATTRACT IN

Maryland Blue

• *Also available in Clear Glass*

Betner...*America's Busiest Bags*

Whatever the packaging need, there's a Betner bag to fill it!

Just a few examples of Betner's complete bagging service:

DUO-TITE . . . *the Perfect "No-Sift" Bag*

At last, the ideal bag for products which must be packaged in siftproof containers . . . insecticides, fertilizers and other dry chemicals. DUO-TITE's sturdy construction combines special liners with folding, gluing, and heat-sealing. Available in sizes holding up to 25 lbs. of bulk powdered material.

THERMOSEAL . . . *the Bag with 20% More Protection*

It's a fact. There is 20% more protection offered by Betner's THERMOSEAL than by other closures. Best of all, THERMOSEAL eliminates staples and other adhesives, and insures water-vapor protection, siftproofness and retention of flavor.

BENCOSEAL . . . *the Bag or Wrap with Extreme Water-Vapor Protection*

Absolute sanitation, dryness and flavor freshness are guaranteed by this unique combination of paper, metal foil and tissue laminated with a thermoplastic wax film. BENCOSEAL may be heat-sealed at moderately high temperatures without fear of blocking, thereby rendering itself to high speed production. It lends itself to any type of printing for consumer eye-appeal.

FLAV-O-TAINER . . . *the Bag with Vacuum-Packed Freshness*

Whenever freshness is a must—Betner's FLAV-O-TAINER delivers it! Lined with Pliofilm (mfd. by Goodyear T. & R. Co.), all inner seams are hermetically sealed. And simply by replacing air with inert gas, and heat sealing at top, FLAV-O-TAINER becomes an air tight unit.

A complete bag service . . .

from idea to finished bag. Also machinery for closing coffee bags, and inserting and closing liner bags in cartons. Your inquiries are welcome. Samples with full technical information will be promptly supplied.

Benj C Betner Co DEVON, PA.

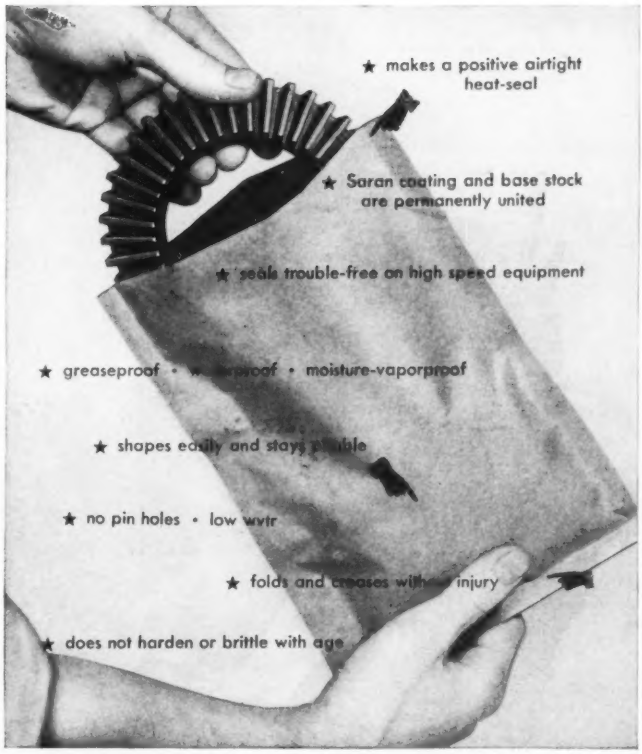
BENJ. C. BETNER CO. of VA., Richmond, Va.; BENJ. C. BETNER CO., of WISCONSIN, Appleton, Wisconsin; BENJ. C. BETNER CO., Paris, Texas; BENJ. C. BETNER CO. of CALIFORNIA, Los Angeles, California; Southern Packaging Corporation, Affiliate of BENJ. C. BETNER CO.

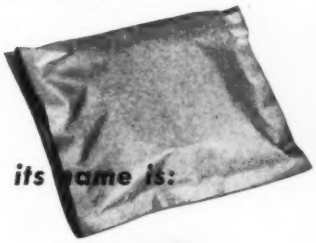
More Efficient Bags and Pouches for Government Packaging

are being made with SARAN COATED KRAFT hot-melt *LOXOL coated

The *LOXOL process is a method of controlled gauge coating with thermoplastic resins hot-melted to various weights of paper, fabrics, or foils. Coating thicknesses are determined by end use requirements. Base material and coating are permanently united, and best values of each applied resin are retained.

*LOXOL T. M. Reg.


★ makes a positive airtight heat-seal
★ Saran coating and base stock are permanently united
★ seals trouble-free on high speed equipment
★ greaseproof • moisture-vaporproof
★ shapes easily and stays pliable
★ no pin holes • low wvtr
★ folds and creases without injury
★ does not harden or brittle with age



its name is:

Sara Pak

Saran coated kraft for method 1A-8 packaging • meets JAN-P-117, grade A, types 1 & 2, class "d"

Saran coated Sara Pak is another HPS "first" in the development of protective wrappings, this time fully conforming to one of the most rigid JAN specifications: a heavy, and medium-heavy duty wrap, heat-sealable, greaseproof, waterproof, and moisture-vaporproof. Write for samples and complete data on this DO specification barrier material.

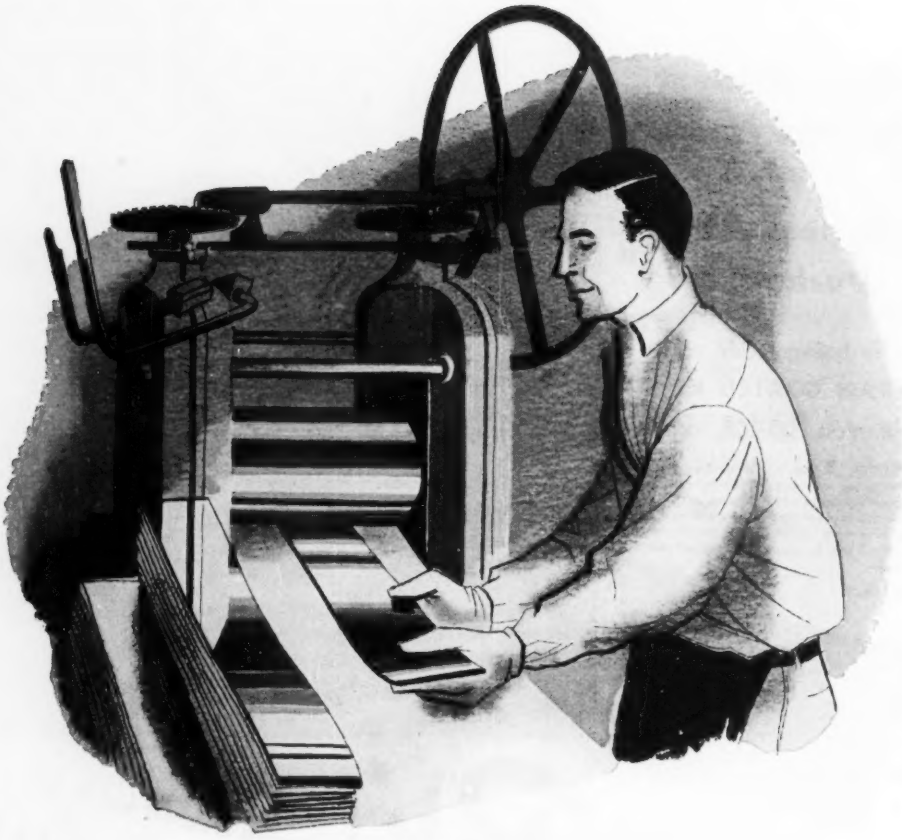
FABRICATORS NAMES SUPPLIED ON REQUEST

Write HPS
for samples and specifications of
BARRIER MATERIALS
for Government packaging.

H. P. SMITH PAPER CO.
MANUFACTURERS

IMPREGNATORS · LAMINATORS · FOIL COATERS · PAPER · FABRIC

5007 WEST SIXTY-SIXTH STREET • CHICAGO 38, ILLINOIS



HOW TO OUTWIT A PINHOLE

If pinhole leaks in tubes have ever given you trouble, look closely at this picture. This mill is rolling sheets of metal from which blanks for tubes will be punched—a common, simple step in tube-making.

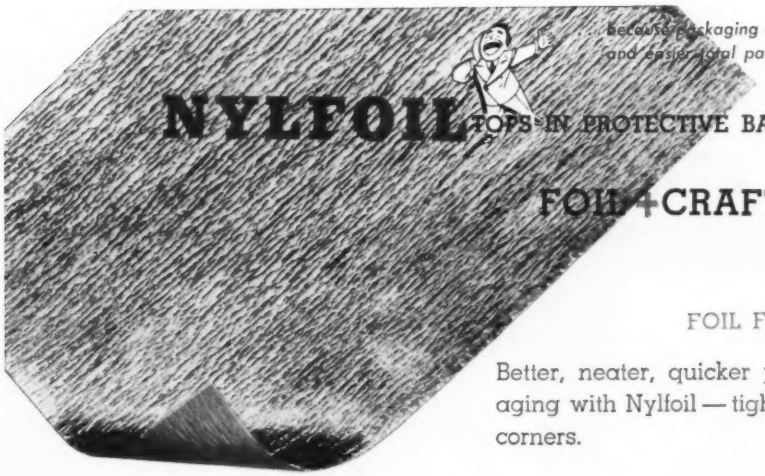
But its very simplicity can be a booby-trap. For the slightest surface defect at this stage, the tiniest bits of dirt, can show up during filling or even after consumer purchase as exasperating pinhole leaks.

Sun Tube outwits pinholes by taking *uncommon* care during this common operation. Our ability to do so consistently stems from our long experience in holding to *quality* standards...to give customers tubes that protect the product perfectly, sparkle with sales appeal, fill at lowest cost.

Sun Tube Corporation

181 Long Avenue, Hillside 5, New Jersey

Chicago 26, Ill. . . . . *James L. Coffield, Jr., 7720 N. Sheridan Rd.*
St. Louis 1, Mo. . . . . . *M. P. Yates, Arcade Building*
Cincinnati 8, Ohio . . . . . *Ralph H. Auch, 3449 Custer Road*
Seattle 4, Wash. . . . . . *King & Anderson, 1016 First Ave. South*
San Francisco 3, Calif. . . . *King & Anderson, Western Merchandise Mart, 1355 Market Street*
Portland 13, Ore. . . . *King & Anderson, 4439 N. E. Killingsworth Ave.*
New Orleans 19, La. . . . *R. P. Anderson Co., 925 No. Solomon Place*
Houston 6, Tex. . . . . . *R. P. Anderson Co., 1426 Castle Court*
St. Paul 1, Minn. . . . . . *Alexander Seymour, 712 Pioneer Bldg.*
Dallas 2, Tex. . . . . . *R. P. Anderson Co., 317 Texas Bank Bldg.*
Los Angeles 65, Calif. . . . *King & Anderson, 3635 Fletcher Drive*



. . . because packaging operations are quicker and easier, total packaging costs are less

NYLFOIL TOPS IN PROTECTIVE BARRIER MATERIALS

FOIL + CRAFT + CREPING

FOIL FOLDS FLAT

Better, neater, quicker packaging with Nylfoil — tight lap corners.

CREPED FOR FLEXIBILITY

Form fitting wrappings absorb shock, best for irregular shapes.

LOWER PERMEABILITY

Seals in grease and inhibitors. Seals out moisture vapors, etc.

MECHANICALLY STRONGER

Tested stronger for tensile, elongation, bursting, tearing, sealing and folding.

EXCLUSIVE "QUINTESTING"

Nothing is left undone to make Nylco products top standard in the industry. Only Nylco has "Quintested" Protective Barrier Materials. Tested for materials, manufacturing, product, specifications, end use.

FREE PROPERTY FOLDER

Write today for generous swatch samples, descriptive literature, Nylfoil Property Tests and packaging information. On your letterhead ask for Nylco File Folder #111.

DESIGNED FOR USE
NYLCO
WHERE PROTECTION COUNTS

NYLCO Protective Barrier Materials
PRODUCTS INC.
530 MAIN ST., CLINTON, MASSACHUSETTS

Represented nationally by leading packaging engineers:

R. M. Reutlinger & Assoc.
Hulman Bldg., Dayton, Ohio

Allied Commodities Co.
Andrus Bldg., Minneapolis 2, Minn.

Protective Packaging Co.
542 S. Dearborn St., Chicago 5.

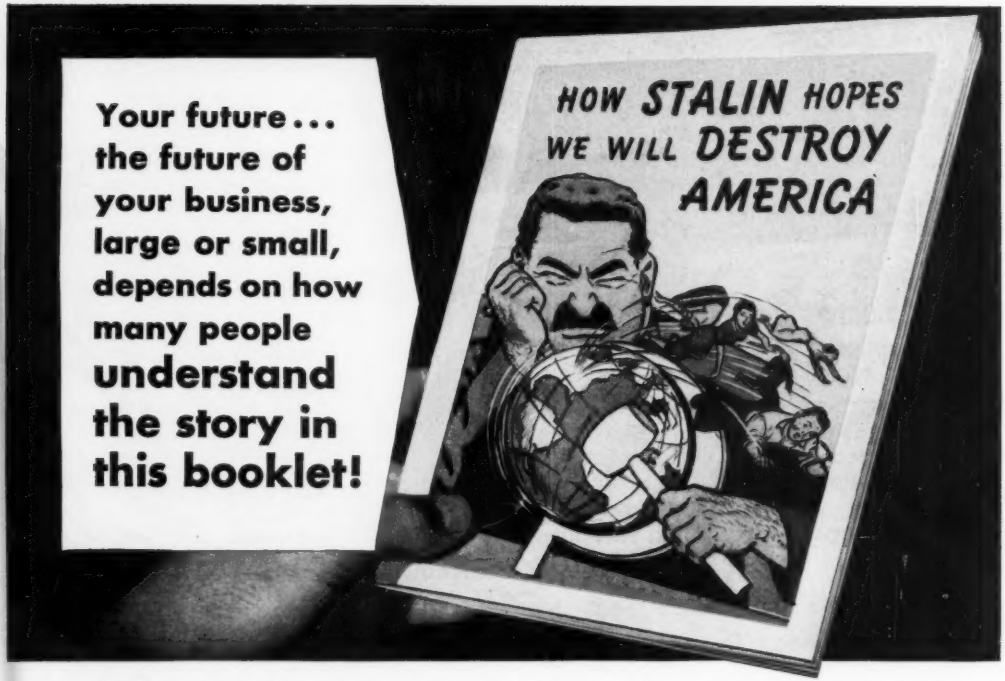
Allied Commodities Co.
Merchandise Mart., Kansas City 8.

Leonard Barol & Associates
1508 Finance Bldg., Philadelphia.

William Diemer & Co., Inc.
274 Madison Ave., New York 15.

Planning a wonderful New England vacation? Drop in and see us!

There IS something YOU can do ABOUT INFLATION!


Your future... the future of your business, large or small, depends on how many people understand the story in this booklet!
HOW STALIN HOPES WE WILL DESTROY AMERICA

Businessmen recognize **inflation** *as the nation's greatest single threat. But most of us have felt "What can one man—even one business—do to stop it?"*
But there is a way—if enough of us work at it. We can help more people . . . the men and women who work and vote and pay taxes . . . to understand the nature of inflation, its **causes** *and* **cures.** *Then we will have gone a long way toward eliminating this pending catastrophe.*

ONE TOOL YOU CAN USE: To help us give our own Bemis workers the inflation picture, we used the colorful, new 16-page booklet "How Stalin Hopes We Will Destroy America" produced by Pictorial Media, Inc. The more widely the booklet is used, the more good it will do . . . and it is available for distribution to your workers, too. It follows the time-proven "comic book" technique . . . dramatizes the dangers . . . and shows how all our citizens can help halt inflation before it's too late.

TESTS SHOW IT HELPS WORKERS: To get an impartial judgment of the value of "How Stalin Hopes We Will Destroy America," it was tested in Bemis plants by the Psychological Corporation under the direction of Dr. Henry C. Link, a foremost research authority. Dr. Link says "Those workers exposed to the booklet were found to have a significantly higher appreciation of the recommended ways to stop inflation than did the workers who did not see the booklet. Details of this test are available upon request." And Bemis factory workers make such statements as "Everything it says hit home, but you'd never figure it out for yourself until you read it". . . ."It's told in an interesting way so anyone can understand. My daughter, age ten, understood all of it". . ."In picture form it impresses you more. Most people don't read about it". . ."Had ideas that we wouldn't think about otherwise while we are working away—good book, agree with it—I guess I won't be the only one."

Because we believe this message is growing more urgent every day, Bemis is taking this means to commend to other businesses this weapon against inflation. It is the first of a series of such material that we expect to use.

BEMIS BRO. BAG CO.
St. Louis 2, Missouri

FOR EVERY BUSINESS, LARGE OR SMALL: In quantities, it costs only a few cents a copy—$10.00 for 100 copies, down to 3 cents per copy in larger quantities. Single copy free. For full information, write PICTORIAL MEDIA, INC., Attention: Paul Wheeler, 205 E. 42nd ST., NEW YORK 17, N.Y.

Now out of the Holiday CLASS

THROUGH PROMOTION AND SOUND PACKAGING CRANBERRIES BECOME A "REGULAR" ON AMERICAN MENUS

The promotional program that lifted cranberries out of the holidays-only class, is another success story with packaging playing a stellar role. The hard-selling window-box again proved itself a persuasive salesman.

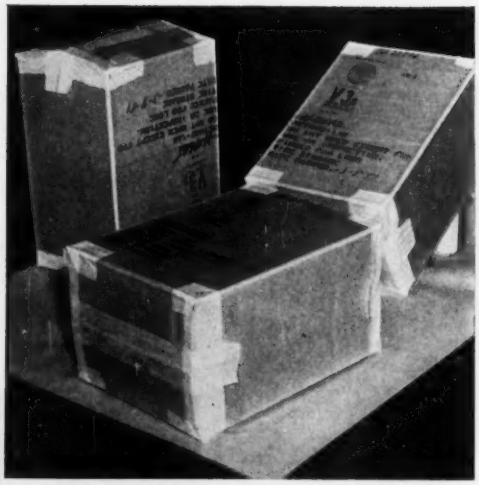
Cranberries packed in window-boxes are protected against bruising and crushing. Their sparkling windows of Celanese* *acetate* transparent film bring the berries "out in the open", yet keep them clean and fresh. Window-boxes are easy to stack . . . make eye-catching mass displays . . . allow the product to sell itself . . . promote the extra "impulse" sales that add up to volume business the year 'round.

*Reg. U. S. Pat. Off.

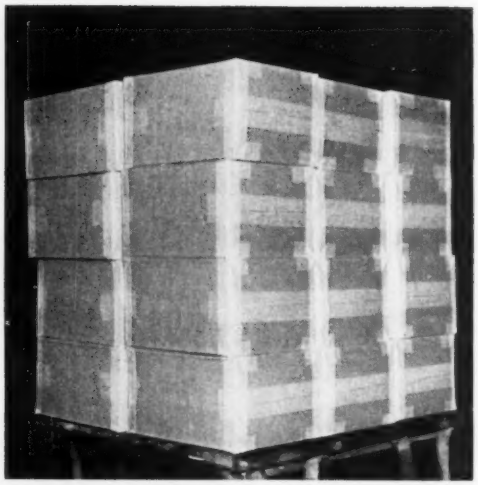
Celanese Corporation of America, Transparent Films Dept. 108-G, 180 Madison Avenue, New York 16, N. Y. In Canada, Canadian Cellulose Products, Ltd., Montreal and Toronto. *Celanese Acetate Transparent Film is sold under the registered trademark "Lumarith*."*

Celanese® Acetate

TRANSPARENT FILM



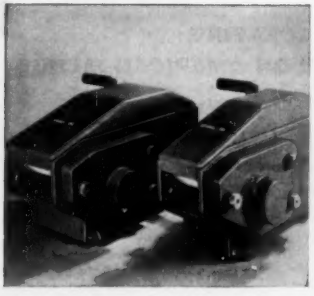
ORDINARY TAPES sometimes creep, wrinkle and pull off . . . in many instances even before the cartons leave the plant. This results in rejected shipments, unnecessary delays.



"SCOTCH" ACETATE FIBRE TAPE NO. 711 produces tightly sealed cartons that *stay* sealed regardless of shocks and abrasions. That means shipments go through on schedule.

Here's the QUALITY Tape for Sealing V-3 and W cartons

"SCOTCH" Acetate Fibre Tape No. 711 surpasses government sealing tape specifications



AUTOMATIC TAPE DISPENSERS will dispense tapes up to 4 inch widths in single or multiple rolls. Adjustable to get single stroke lengths up to 10, 15, and 20 inches. Just the ticket for speeding up tape application.

HERE'S A TIMESAVER for protecting labels against smudging, scuffing, and weathering. Transparent "SCOTCH" Acetate Fibre Tape No. 711 has a glass smooth surface that gives lasting protection.

The term "Scotch" and the plaid design are registered trade-marks for the more than 100 Pressure-sensitive adhesive tapes made in U. S. A. by **MINNESOTA MINING & MFG. CO.**, St. Paul 6, Minn.—also makers of "Scotch" Sound Recording Tape, "Underseal" Rubberized Coating, "Scotchlite" Reflective Sheeting, "Safety-Walk" Non-slip Surfacing, "3M" Abrasives, "3M" Adhesives.

General Export: Minn. Mining & Mfg. Co., International Division, 270 Park Avenue, New York 17, N. Y. In Canada: Canadian Minnesota Mining & Mfg. Co., Ltd., London, Canada.

For over 50 years

discriminating manufacturers

have been building sales

of products which are packaged

in Rowell Containers.

Expert craftsmanship.

Magnificent color printing.

Prompt deliveries.

E. N. Rowell Co. Inc.
Manufacturers of Fine Paper Boxes
BATAVIA, N.Y.

THE READING ROOM OF THE ALGONQUIN CLUB, BOSTON. Photograph by Nickolas Muray

Your Guide to Fine Papers...

McLAURIN-JONES

The name, McLaurin-Jones Company is your assurance of superior-quality papers for printing and packaging purposes—a name that is famous throughout the world for *generations* of skill and craftsmanship in the creation of new and improved papers for business and industry.

Among the wide range of McLaurin-Jones papers, famed for their excellence, are: ***Waretone,*** mirror-finish coated paper for printing, label, box covering, cover and postcard work. ***Guaranteed Flat Gummed Papers*** for labels, seals and stickers. ***Old Tavern Gold and Silver Metallics*** for labels, box work and printed pieces. ***Relyon Reproduction Paper*** for the printing trade. A full line of ***Sealing Tapes, Stays,*** and ***Gummed Cambrics*** for boxes, cartons, and containers.

McLaurin-Jones Papers are advertised regularly in NEWSWEEK and BUSINESS WEEK

"A PIONEER IN PAPER PERFECTION"

McLAURIN-JONES COMPANY

BROOKFIELD, MASSACHUSETTS Offices: New York · Chicago · Los Angeles

This little Piggy went to Market

in a colorful bag

PORK SKINS COOKED IN SHORTENING AND SALTED
MAGIC CITY FOOD PRODUCTS CO., INC.
1501 LOMB AVE. BIRMINGHAM, ALA.
PHONES 8-3342 8-3343
GOLDEN FLAKE CRACKLINS
PRINTED BY STANDARD
GOLDEN FLAKE CRACKLINS
TRADE MARK REG. U. S. PAT. OFF.
NET WT. 1/2 OZ. OR OVER

Sales promptly "went to town" too, when the eye-catching Cracklins bag hit the store shelves.

Like hundreds of other sales-winning packages, the cellophane bag that helped put Cracklins across is a complete Standard product, including design and printing.

Remember, Standard designs and prints transparent packages that do their part to entice customers . . . at lowest cost.

COLOR-CRAFT

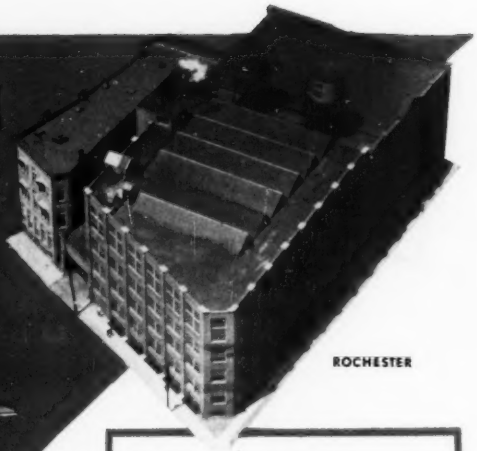
Standard printing company

PRINTERS OF CELLOPHANE, ACETATE and GLASSINE SINCE 1936

COLUMBUS, GEORGIA

Sales Offices: Dallas, Texas—Charlotte, N. C.—Jackson, Miss.

2 KNOWLTON PLANTS



Give Fast Service to Production Demands of CONTAINER INDUSTRY...

[redacted] Container production men facing acute problems can contact both Knowlton Plants regarding delivery and cost of new equipment. Direct world-wide shipments are made from Rochester where Knowlton machines are designed and built.

[redacted] REPAIRS of all Knowlton machines are made at Brooklyn Plant. New improvements can be included in machines given complete overhaul, if desired. REBUILT machines of varied types and sizes are available. Included are Wrappers, Gluers, Quad Stayers and many others besides those listed. PARTS are carried in stock at both plants. QUOTATIONS on repairs, replacements and rebuilt machines supplied on request.

[redacted] Our engineers will be glad to consult with you about cost-cutting methods or container production problems.

KNOWLTON LOW COST PRODUCTION EQUIPMENT

SET-UP BOX

Single & Double Scorers
Single and Double Rotary Creasers and Cutters
Single and Double Corner Cutters
Single Stayers (All Sizes)
Universal Coverers, Power (All Sizes)
Hand Power Coverers (All Sizes)
Bench Coverers
Toppers (All Sizes)
Slitters and Rewinders
Flange Benders (Automatic)
Glue Pots

PAPER TUBE & CAN

Automatic Convolute Paper Can Winders
Spiral Winder (Light and Heavy Wall)
Spiral Cut-offs
Tube Recutters
Lap Tube Rollers

SHIPPING CONTAINER

Heavy Vertical Slotters
Heavy Bar Creasers
Paraffine Coaters

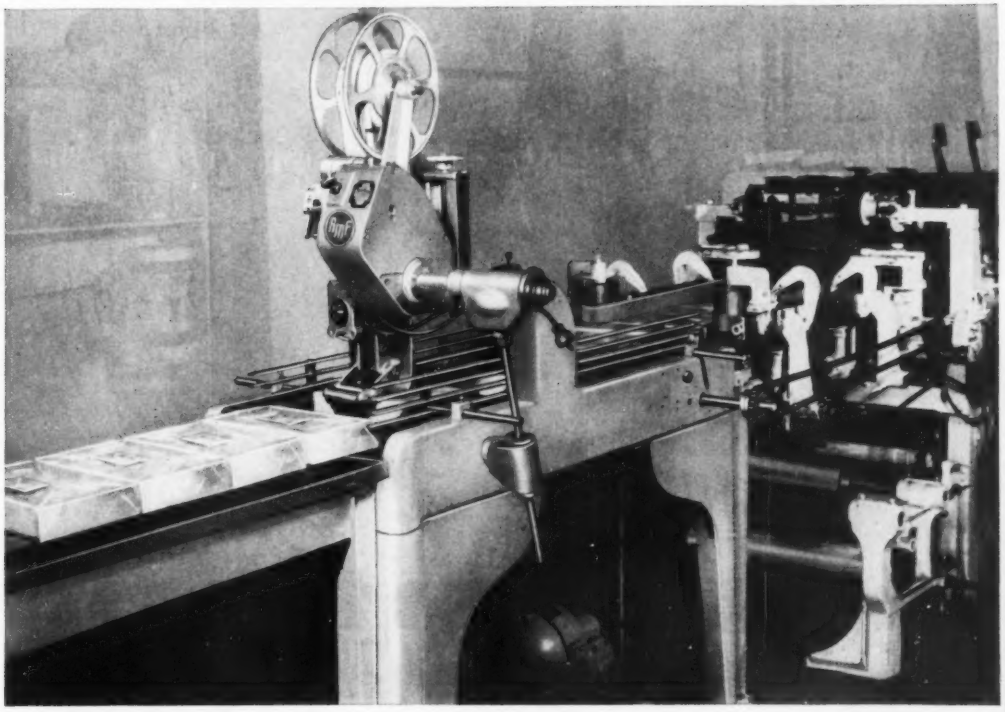
GUMMED STAY PAPERS

Gray, Brown and White

M. D. Knowlton COMPANY

ROCHESTER, NEW YORK

Dress Up, Identify AND SELL with TOP LABELS!



SEND YOUR PACKAGED GOODS TO MARKET with smart, distinctive, economical top labels. They dress up, identify and sell your products at the point of sale.

The new AMF Top Labeler, consisting of conveyor, top labeler and imprinter, automatically imprints and applies thermoplastic roll stock labels to the tops of packages, on or off center. It is easily hooked up to the delivery end of your present wrapping equipment or conveyor mechanism. Or, if you prefer, it runs on its own power. Its speed far exceeds that of any wrapping equipment in the field. It has a "No package—No label" feature. It is easily adjustable for different sizes of packages. It is simple to operate and sturdy in construction.

The imprinter imprints product names, code-dates, quantities, weights, ingredients, prices, etc., using easily changed self-adhesive-backed rubber plates which can be made locally by any rubber stamp manufacturer. A small amount of ink, enough to saturate the felt ink-roller, is used to imprint a full day's run.

Because you can use a single stock label to be imprinted differently for various products, your inventory of labels is kept to a minimum.

Write for specification folder, price and delivery.

TOP LABELER WITH IMPRINTER PORTABLE AUTOMATIC

AMF DOES IT BETTER—*AUTOMATICALLY!* SINCE 1900

AMERICAN MACHINE & FOUNDRY COMPANY, 485 Fifth Ave., New York 17, N. Y.
West Coast Sales & Service Headquarters, 1258 Mission Street, San Francisco 3, California

soak it...→

boil it...→

freeze it...→

grease it...→

Patapar can take it!

Wonderful for:

Butter wrappers
Ham boiler liners
Deep freeze wraps
Can liners
Fish wrappers
Cheese wrappers
Margarine wrappers
Milk and cream can gaskets
Bacon wrappers
Vegetable wraps
and many other uses

Patapar is furnished plain or beautifully printed in one or more colors.

Patapar
HI-WET-STRENGTH
GREASE-RESISTING PARCHMENT

There's no paper quite like Patapar Vegetable Parchment. Soak it in water—boil it. Patapar stays strong and beautiful. Freeze it—thaw it out. No loss of strength. Wrap greasy things in it. The grease doesn't come through.

Standard weights and types of Patapar take care of most needs. For special problems there are special types of Patapar—179 different types in all. If you have a special problem, why not tell us about it?

This Keymark, nationally advertised symbol of wrapper protection, can be included on printed Patapar wrappers.

Paterson Parchment Paper Company
Bristol, Pennsylvania

Headquarters for Vegetable Parchment since 1885
West Coast Plant: 340 Bryant Street, San Francisco 7, California
Sales Offices: 122 E. 42nd Street, New York 17, N. Y. • 111 W. Washington St., Chicago 2, Ill.

Good Neighbor Policy

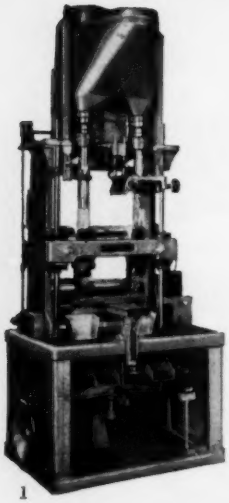
The Good Neighbor Policy is an important part of our planned service to packers. There's always an H-A factory convenient to your plant.

You know what this means... faster deliveries, shipping savings, and expert production help when you need it.

WE'RE AT YOUR SERVICE

HAZEL-ATLAS GLASS CO.
WHEELING, W. VA.

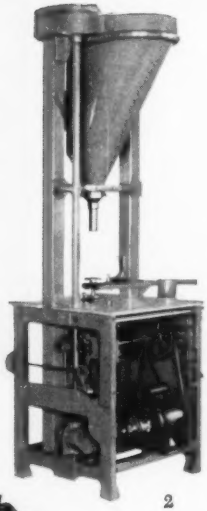
Ready to Serve You...



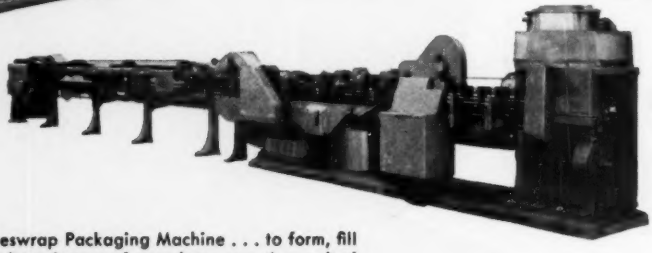
1

S & S

S & S Filling Machines "fill" today's modern packaging requirements . . . by lowering packaging costs through increased production . . . and assuring accurately and uniformly filled packages—neat-looking packages that stimulate over-the-counter-buying.



2



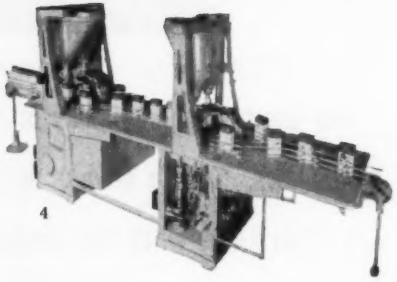
3

1. Stokeswrap Packaging Machine . . . to form, fill and seal packages of powders, granules, salted nuts, candies, small crackers, coffee, tea and individual pieces.

2. Universal Filler . . . for filling powders, granules, pastes by gross weight, packing or volumetric measurement of cans, jars, boxes, envelopes, etc.

3. Neverstop carton filling and sealing machine with automatic carton feed—bottom seal—rotary automatic feed—top seal for salt, soap, granules, rice, cracker meal or other free flowing products.

4. Automatic tandem four station filling machine for powders or granules . . . to fill by volume and weighing cans, jars, cartons, etc.



4

"Speeds to Suit Your Needs"

Exclusive West Coast Distributor:
Anderson-Barngrover Division of FMC
San Jose 5, California

STOKE S&S SMITH Co

PACKAGING MACHINERY **PAPER BOX MACHINERY**

Subsidiary of Food Machinery and Chemical Corporation

fmc

Frankford, Philadelphia 24, U. S. A.

Can You Match Them Up?

KNUCKLE BALL
CURVE BALL
THE SLIDER
FAST BALL

How the pitcher handles the ball sometimes can make the difference between a strike and a hit. Your coffee brand may have 2 strikes against it—the moment that it's put on store shelves—if your package design doesn't make a hit with customers!

That's where Oneida can go to bat for you! For Oneida design is known for perking up customer interest. Oneida bags make appealing point-of-sale displays because they square off like boxes when packed. And on production lines, these bags provide trouble-free performance.

It won't take long for a ball fan to pick the upper left-hand illustration as the grip for a curve ball; the upper right as the fast ball; the lower left as the slider; and the lower right as the knuckle ball. And it won't take long to see why Oneida-bagged coffee spends so little time on market shelves—once you've looked over some samples. Write for some—TODAY.

Many Of America's Most Famous Coffees Go To Market In Oneida Coffee Bags!

ONEIDA
paper products inc

14 Clifton Boulevard, Clifton, New Jersey
Fort Worth, Texas • Los Angeles, California

Converters and Color Printers of Bags, Envelopes, Sheets and Rolls from: Glassine, Cellophane, Pliofilm, Parchment, Polyethylene, Sulphite, Foil, Acetate, Kraft, Waxed, Coated and Laminated Grades . . . in Flat, Square, Automatic, Window Satchel-Bottom, Duplex, Embossed and Heat-Lok Styles.

first impressions...

lasting appearance...

You could call it "sell-ability"—but impulse buying depends on a professional packaging job. Lynch WRAP-O-MATICS are professionals. For years they've helped market products for Confectionery, Bakery and other industries with neat, high speed wrapping that keeps costs down, keeps the package looking "well" until it's sold. If either costs or appearance is your present problem, see what WRAP-O-MATICS can do to help solve it.

PAR AIR COMPRESSORS

PAR REFRIGERATION COMPRESSORS

WRAP-O-MATIC CANDY & COOKIE WRAPPING MACHINES

LYNCH CORPORATION

PACKAGING MACHINE DIVISION

TOLEDO, OHIO

MORPAC PAPER PACKAGING MACHINES

MORPAC BUTTER & OLEO CARTONING MACHINES

GLASS FORMING MACHINES

Kromekote
COLORCAST BOX WRAP

CHAMPION

Kromekote

T. M. Reg. U. S. Pat. Off. for Champion's Cast Coated Paper

COLORCAST BOX WRAP

Kromekote Colorcast is a new development in the Kromekote line of cast coated papers. Its clear, brilliant colors, high gloss, freedom from mottle, rub resistance, and light fastness make it ideally suited for the fine, ultra-modern boxes so popular for quality products. Kromekote Colorcast is made in the following colors:

Patent Leather Black, No. 052
Christmas Red, No. 053
Christmas Green, No. 054
Royal Blue, No. 055
Canary Yellow, No. 056
Ivory, No. 057
White, No. 058

THE CHAMPION PAPER AND FIBRE COMPANY

General Offices . . . HAMILTON, OHIO

Distributors of Champion Kromekote Colorcast Box Wrap

Atlanta, Georgia . . . . . The Whitaker Paper Company
Boston, Massachusetts . . . . . The K. E. Tozier Company
Chicago, Illinois . . . . . Bradner Smith & Company
Dwight Brothers Paper Company
Charles W. Williams & Company
Cincinnati, Ohio . . . . . The Queen City Paper Company
Los Angeles, California . . . . . Carpenter Paper Company
New York, New York . . . Holyoke Coated & Printed Paper Company
Royal Paper Corporation
Charles W. Williams & Company
for Export . . . . . Bulkley, Dunton Paper Company, S. A.
Butler Co., Butler American Paper Division
Philadelphia, Pennsylvania . . . . . Matthias Paper Corporation
San Francisco, California . . . . . Carpenter Paper Company
Toronto, Canada . . . . . Blake Paper Limited

Does your package stand out in a crowd?

Today more than ever, your package design must bring the shopper's glance into focus for buying. Surveys show that two out of three purchases in supermarkets are decided while the shopper is in the store, seeing displays of many competing products.

A package *can* take hold at a glance if the shape, layout, colors and other factors of design all pull together.

The ability of your package to attract the shopper is one of twelve check points in "How To Rate Your Package Objectively," a handy folder prepared by Du Pont. Write today for this easy-to-use guide that helps analyze the self-selling job your package is doing. E. I. du Pont de Nemours & Co. (Inc.), Film Department, Nemours Bldg., Wilmington 98, Delaware.

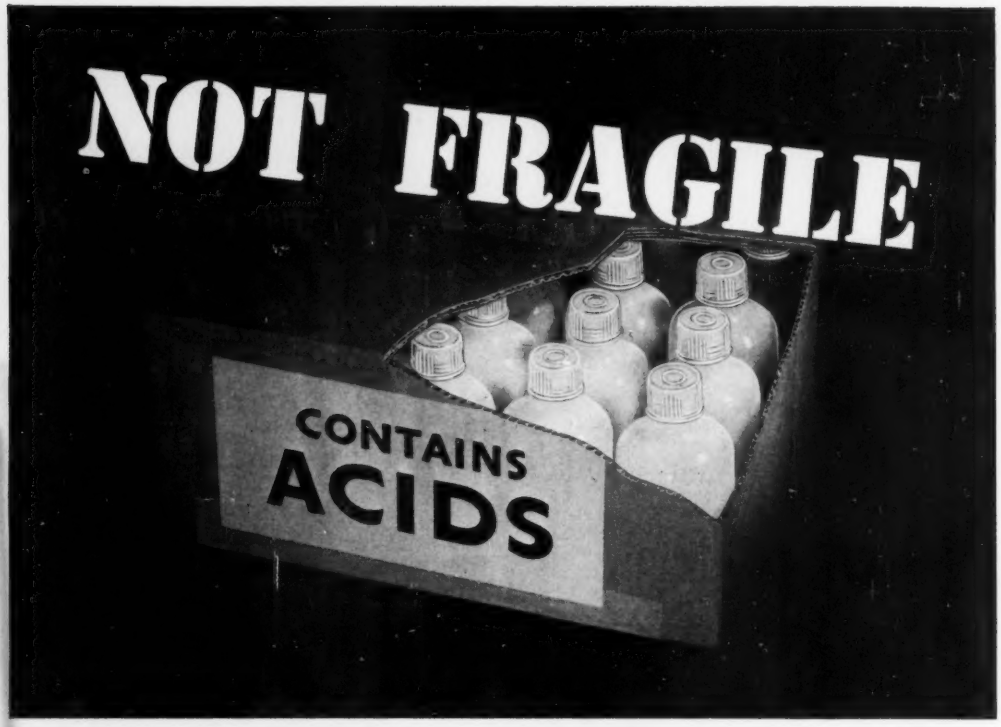
DuPont Cellophane

Shows what it Protects—Protects what it Shows

DU PONT

REG. U.S. PAT. OFF.

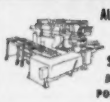
BETTER THINGS FOR BETTER LIVING
. . . THROUGH CHEMISTRY



For Packaging Acids so that they can be shipped, stored and handled without fear of breakage, on the ground or in the air. Need to get a highly corrosive or expensive chemical somewhere in a hurry? The Plaxpak bottle is the answer. Take it high in the sky. Unequal pressures will cause it to flex, but not break or pop its closure. Drop it on the ground. It will bounce, but not break. Shipping weights are drastically reduced. When compared empty, the Plaxpak bottle is one-fifth the weight of glass; when filled, one-half the weight.

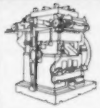
Only the best is

OTHER EMHART PRODUCTS INCLUDE:



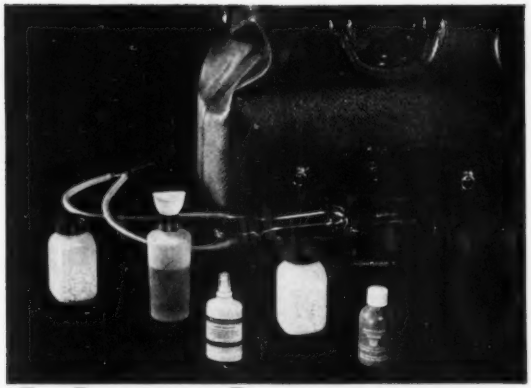
AUTOMATIC PACKAGING EQUIPMENT
STANDARD-KNAPP
Division of Emhart Mfg. Co.
PORTLAND, CONNECTICUT

GLASS MAKING MACHINES
HARTFORD-EMPIRE CO.
Division of Emhart Mfg. Co.
HARTFORD 2, CONNECTICUT



HIGH SPEED AUTOMATIC PRESSES
HENRY & WRIGHT
Division of Emhart Mfg. Co.
HARTFORD 5, CONNECTICUT

PREMIUM QUALITY STAMPING PRESSES
THE V & O PRESS CO.
Division of Emhart Mfg. Co.
HUDSON, NEW YORK



For Packaging Pharmaceuticals in liquid or powder form, the Plaxpak bottle offers the triple advantages of unbreakability, lightweight and, where desired, controlled dispensing as a spray, stream or droplet. Shown above are some stock bottles for medicinal use.

For Laboratory Research the Plaxpak bottle provides the convenience of an unbreakable, chemically inert container, and the added advantage of controlled dispensing. The stream dispensing fitment shown above was developed by S. H. Ansell & Sons, Boston, Mass.

For Boosting Turpentine Production the Plaxpak bottle has proven an invaluable aid. It is used as a container for sulfuric acid, which is squirted into "wounds" in the tree to increase sap flow. Safe, easy to handle and inert to the acid, the Plaxpak bottle speeds up operations, vastly increases manhour output and helps to lengthen tree productivity.

good enough

HELPFUL PLAX LITERATURE
Catalogs on Plaxpak bottles and other Plax products are available on request. Also available is a booklet "Fabrication of Polystyrene."

PLAX
FOR PLASTICS
NOT SUBSTITUTES IMPROVEMENTS

PLAX CORPORATION
Subsidiary of Emhart Mfg. Co.
P. O. BOX 1019, HARTFORD 1, CONN.
In Canada, Plax Canada, Ltd., Toronto
Sales Offices: New York City, Syracuse, Philadelphia, Cincinnati and Chicago.

Plax blow-molded products are made under the following U. S. Pats.: 2128239, 2175053, 2175054, 2230190, 2260750, 2283751, 2349176, 2349177, 2349178, 2230188. *Reg. U. S. Pat. Off.

Visible Quality in the Package can Reflect the Invisible Quality of the Product!

Leading Manufacturers of Men's Toiletries, Recognizing That Fact, Give Preference to...

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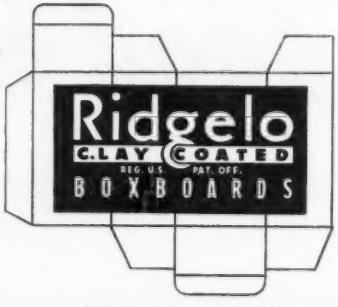
HIGHER VARNISH GLOSS • BRIGHTER – SMOOTHER • LUSTROUS BRUSH FINISHES AND EMBOSSINGS
CUSTOM MADE FOR EVERY ORDER • CONTROLLED COLOR MATCHING



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Sylvania is always ready to help you with your packaging problems. Talk them over with your Sylvania representative or write to us mentioning the specific application in which you are interested. Address: Market Development, Department MP-7.

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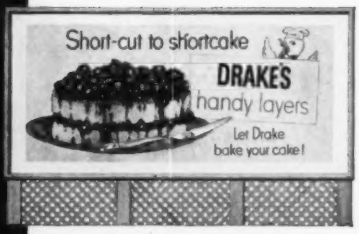

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The best part of a party!

Candy and nuts always have a place near the top of the list of "things to get for the party." A party's not a *real* party without them. And there are lots of folks who know how to please the crowd's taste . . . they buy Teddie's* candies and nuts. And for something really different they serve Teddie's Home Style salted peanuts that are prepared by their new process of water blanching.

Double Protection!

To be sure of safe sealing for its products the John W. Leavitt Company seals them with Crown Closures. And for additional protection against moisture, tampering and sampling they use INASEAL . . . the inner seal fixed in place automatically to form an air-tight seal over the mouth of the jar.

Ask your Crown Representative to show you other examples of INASEAL in use . . . the variety of applications . . . how it may be used to give your product better protection. Crown Cork & Seal Company, Baltimore 3, Maryland.
World's Largest Maker of Metal Closures.

*The products shown here are packed by the John W. Leavitt Company, Boston, Massachusetts.

CROWN CLOSURES

Approved by millions of housewives

Venesta Foil Facts—No. 4

Raise this to read the story behind Venesta Foil

VENESTA *Aluminium Foil*

VENESTA LIMITED
VINTRY HOUSE, QUEEN STREET PLACE, LONDON, ENGLAND
CABLEGRAMS: "VENESTA, LONDON"

The best part of a party!

Candy and nuts always have a place near the top of the list of "things to get for the party." A party's not a *real* party without them. And there are lots of folks who know how to please the crowd's taste . . . they buy Teddie's* candies and nuts. And for something really different they serve Teddie's Home Style salted peanuts that are prepared by their new process of water blanching.

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Crown Cork & Seal Company, Baltimore 3, Maryland.
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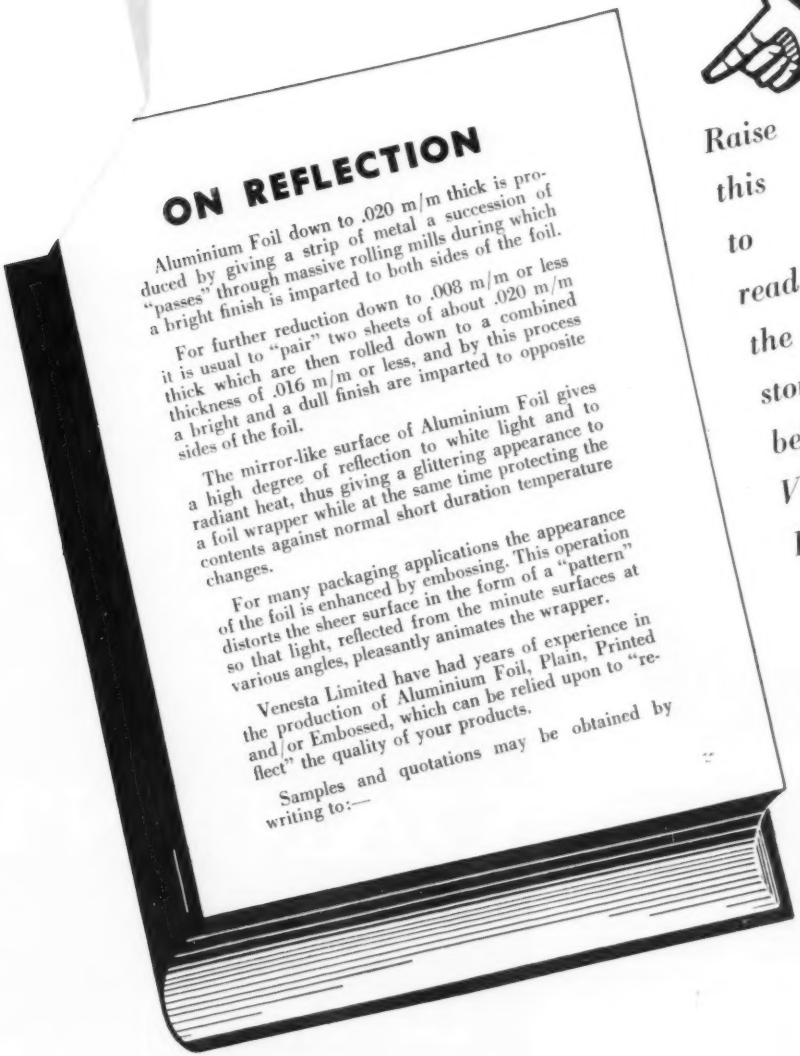
ON REFLECTION
Aluminium Foil down to .020 m/m thick is produced by giving a strip of metal a succession of "passes" through massive rolling mills during which a bright finish is imparted to both sides of the foil.
For further reduction down to .008 m/m or less it is usual to "pair" two sheets of about .020 m/m thick which are then rolled down to a combined thickness of .016 m/m or less, and by this process a bright and a dull finish are imparted to opposite sides of the foil.
The mirror-like surface of Aluminium Foil gives a high degree of reflection to white light and to radiant heat, thus giving a glittering appearance to a foil wrapper while at the same time protecting the contents against normal short duration temperature changes.
For many packaging applications the appearance of the foil is enhanced by embossing. This operation distorts the sheer surface in the form of a "pattern" so that light, reflected from the minute surfaces at various angles, pleasantly animates the wrapper.
Venesta Limited have had years of experience in the production of Aluminium Foil, Plain, Printed and/or Embossed, which can be relied upon to "reflect" the quality of your products.
Samples and quotations may be obtained by writing to:—

Raise this to read the story behind Venesta Foil

VENESTA *Aluminium Foil*

VENESTA LIMITED
VINTRY HOUSE, QUEEN STREET PLACE, LONDON, ENGLAND
CABLEGRAMS: "VENESTA, LONDON"

MOISTURE and VAPORPROOF PROTECTION

Engineered to

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Methods IA and II... JAN-P-117, JAN-B-121, JAN-P-131...AN-C-67b and AN-E-1b ...or the new MIL series . . . these are just a few of the many specifications on which Vanant field specialists can offer you packaging assistance.

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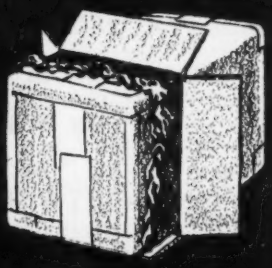
VANANT

ENGINEERED PACKAGING

CARTON BARRIER CARTON

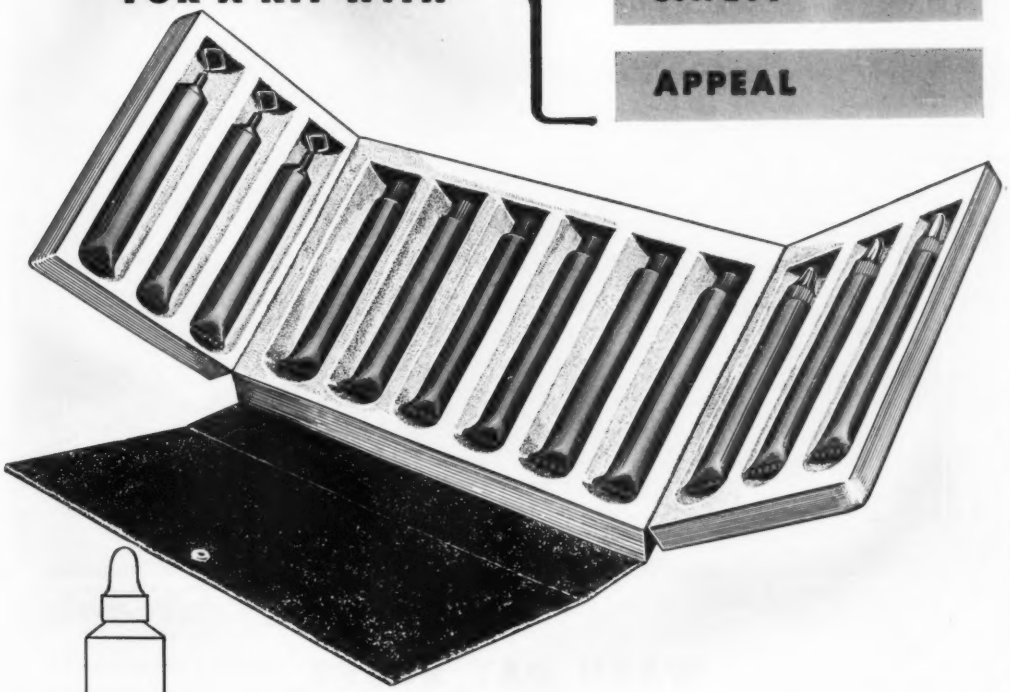
(APPLICATION Method IIb)

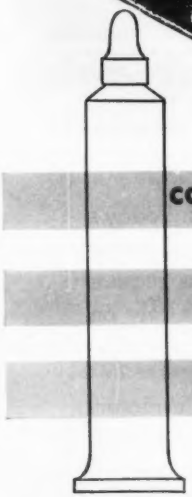


TUBES BY WIRZ

FOR A KIT WITH

- CONVENIENCE
- SAFETY
- APPEAL





Here is a sampling idea for industrial manufacturers and suppliers. A tie-in and multiple sale merchandising suggestion for consumer manufacturers.

Pack your selected products in Wirz tubes, assemble these tubes in convenient kits for over the counter sales or industrial sampling—you'll boost acceptance and sales.

Write today for your copy of Wirz folder—"Collapsible Metal Tubes." It contains complete data and valuable suggestions for tube use.

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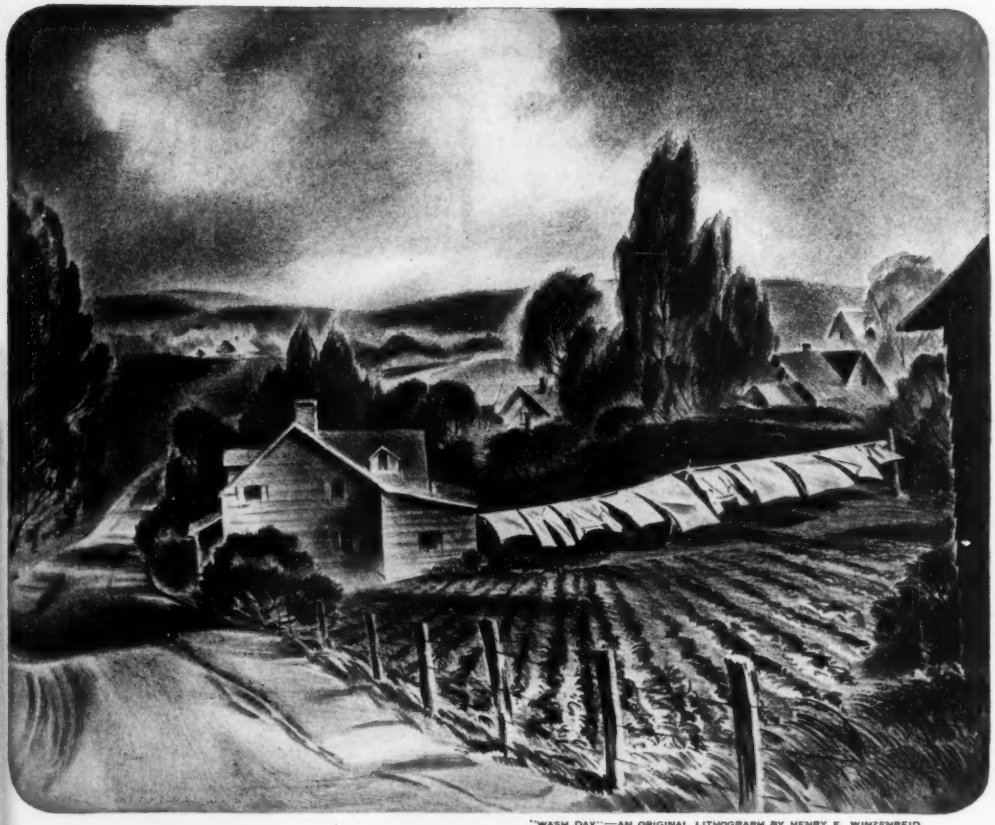

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WASH DAY BLUES

Soap . . . protector of health and beauty . . . needs protection itself. Today's laundry and toilet soaps contain delicate aromas that must be preserved . . . and oils that must not discolor the outer wraps. Many others require sift-proof packages. That's why so many soaps and soap products rely on special Riegel papers for positive protection.

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On CARTONS, too, . . .

it's BBD ANILINE INKS

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for clean, sharp, color-rich results

When it comes to printing carton stock on *any* type of aniline press — with or without metered inking rolls — it's wise to fill the fountains with *proved-in-use* BBD INKS. Formulated especially for boxboard, these inks lay smoothly . . . give level coverage of solids — clean, sharp reproduction of fine lines and type. They are high in color-strength — in hiding power — in fade-resistance . . . have excellent adhesion and flexibility. And, because they are "tailor-made" to suit your particular requirements, you can depend on BBD INKS for trouble-free press performance, too.

When it's an aniline ink problem . . . call in an aniline ink specialist for famous BBD "shirt-sleeve" technical assistance. Contact your nearest BBD office or write direct to Bensing Bros. and Deeney, 3301 Hunting Park Avenue, Philadelphia 29, Pa.

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World's Largest Makers of Aniline Ink
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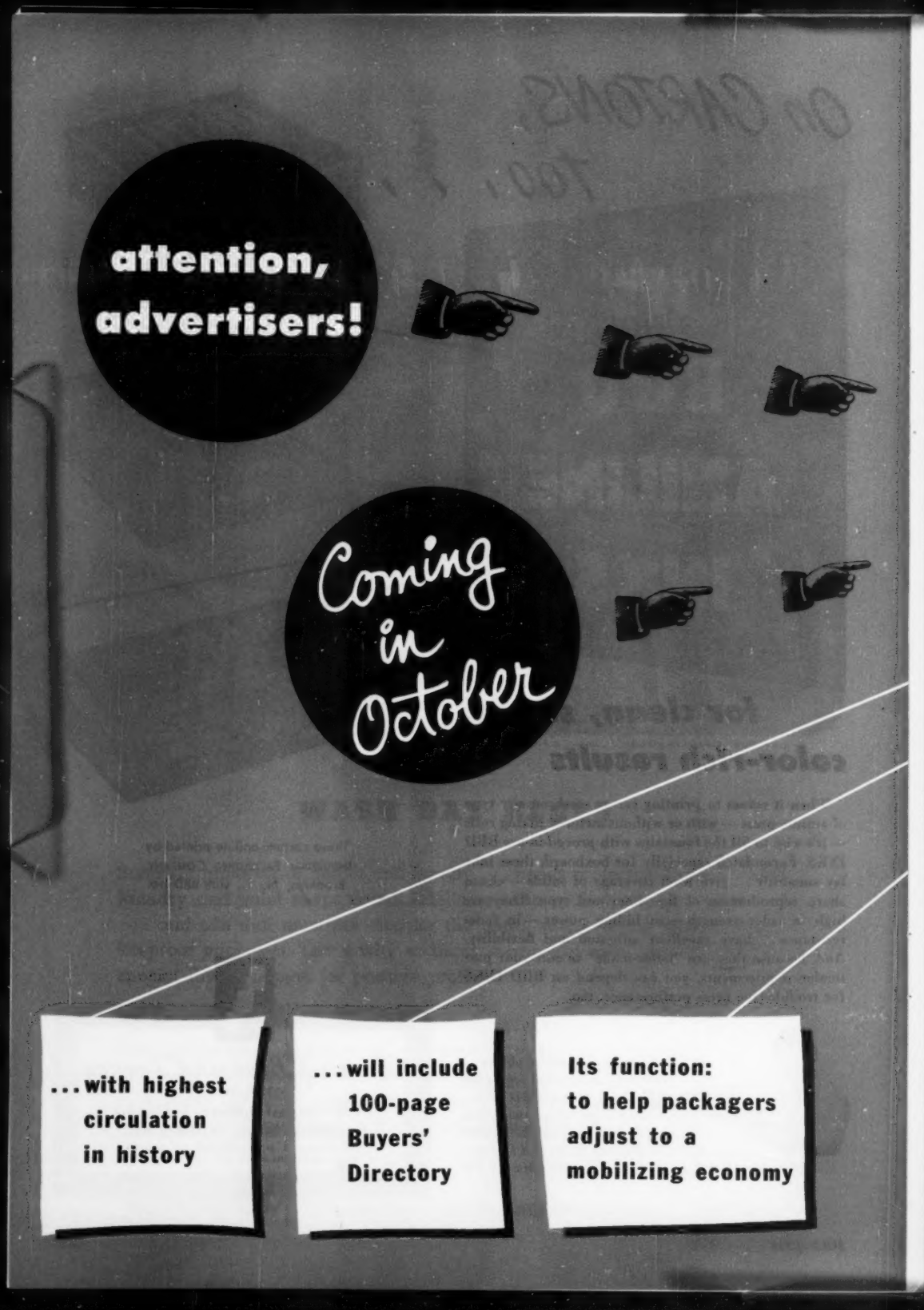
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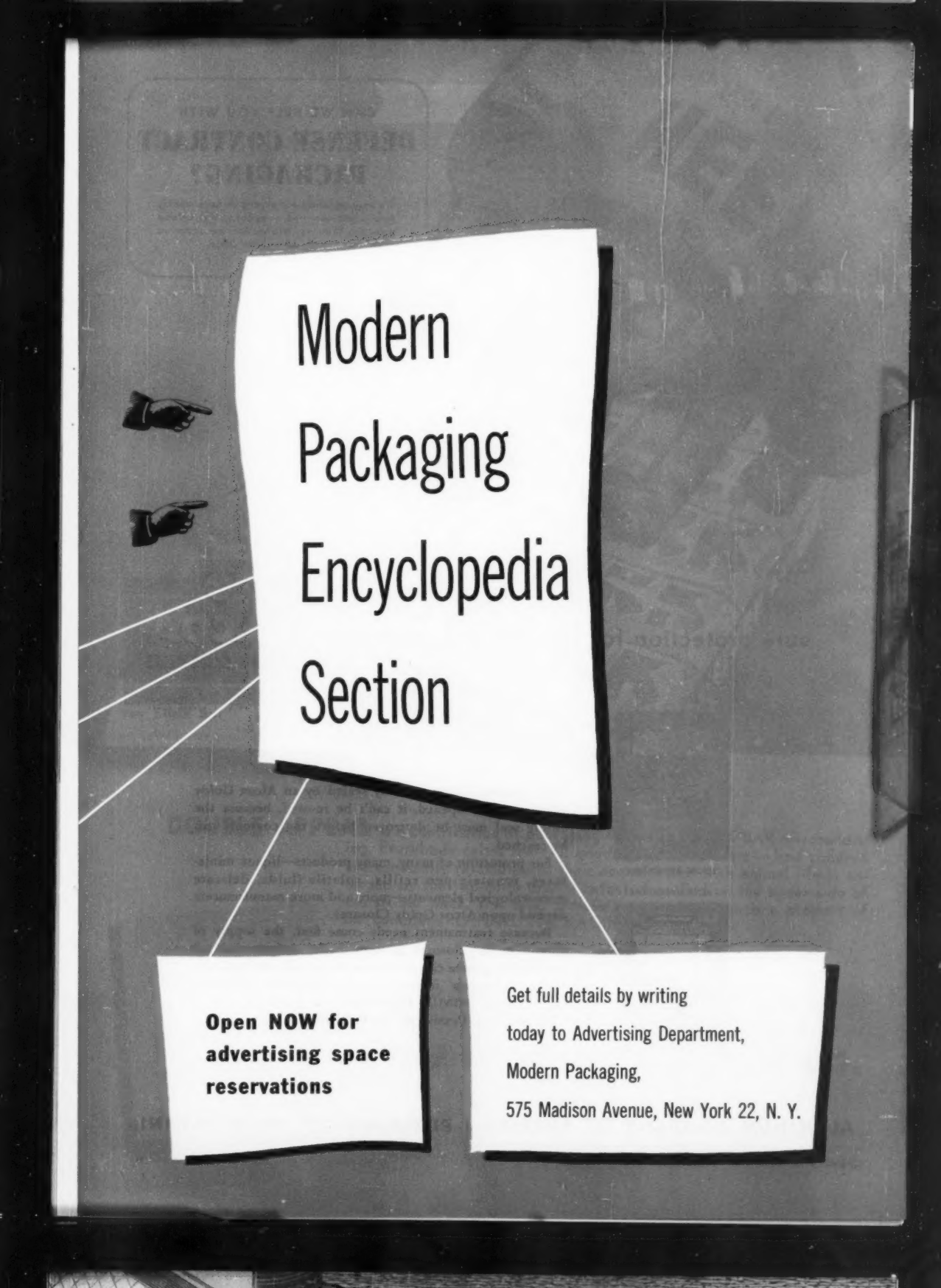
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FORMERLY SOLD AS ALSECO SEALS

BEFORE APPLICATION

AFTER APPLICATION

Your product is hermetically sealed by an Alcoa Goldy Closure. Once opened, it can't be re-used, because the Goldy seal must be destroyed before the contents can be reached.

For protection of many, many products—liquor miniatures, fountain-pen refills, volatile fluids, delicate meteorological elements—more and more manufacturers depend upon Alcoa Goldy Closures.

Because rearmament needs come first, the supply of aluminum for closures is limited. For information on availability, please call your local Alcoa sales office, listed under "aluminum" in your classified telephone directory. Or write ALUMINUM COMPANY OF AMERICA, 1705G Gulf Building, Pittsburgh 19, Pennsylvania.

ALUMINUM COMPANY OF AMERICA • PITTSBURGH 19, PENNSYLVANIA

DOUBLE APPEAL is a contribution of packaging design to CLARK BAR merchandising. Everybody prizes the rich goodness of Clark Bars — and children are especially fascinated as their acquaintance with animal life is enlarged by the two-color animal cutouts they find on the under side of the six-bar pack. This sales stimulating package idea is a product of our complete PLANNED PACKAGING service.

Planned Packaging MOVES MERCHANDISE

O·B CO

THE OHIO BOXBOARD CO.

"Home of PLANNED PACKAGING"

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Sefton puts a string around its new telescope can to make it easy for your customers to open... and close... at will. It's factory-sealed and tamper-proof... to protect your product, too. Choose it.. and any of the other versatile Sefton packages... in the size or shape that suits your product best!

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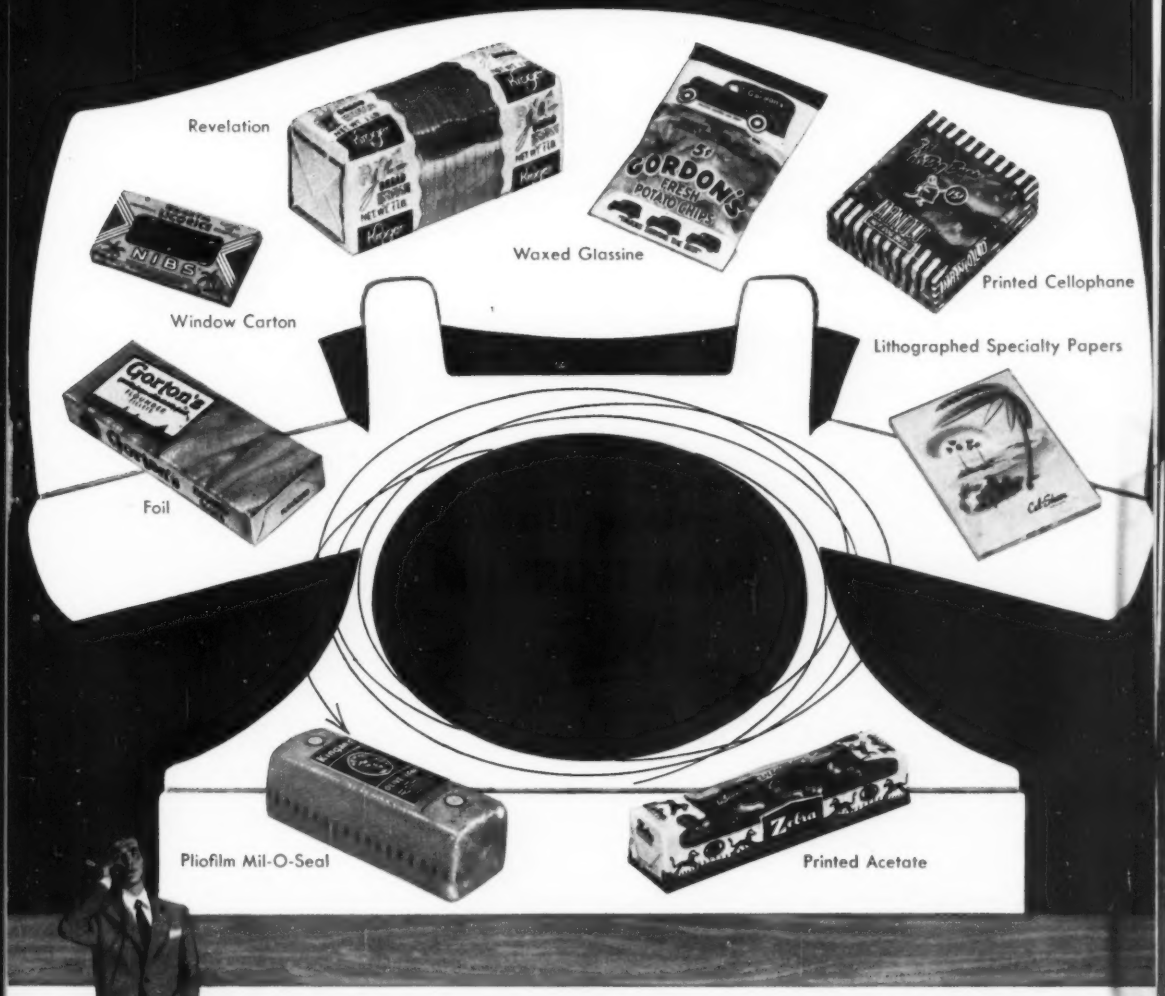
DISTRICT OFFICES: • Los Angeles • Salt Lake City • Denver • Seattle • Chicago • Cincinnati • New Orleans • Boston • Detroit • New York • St. Paul Atlanta • Memphis • Nashville • Portland • Piqua



First FOR SUCCESSFUL PACKAGES

Your Milprint man works with the widest range of packaging materials produced by any single source.

You'll find the answer to your package problem at Milprint. For at Milprint there's no attempt (and no need) to try to make one or two materials do the work of ten.

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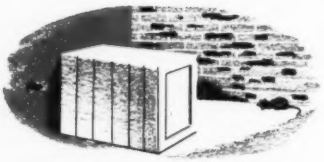

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NUMBER 10
JULY 1951

Modern packaging

CHOW LINE somewhere in Korea. New emphasis on mobility reduces most of the rations to a pocket package, and arctic conditions are anticipated in the specifications for packaging.

QM packaging-1951

FEEDING AND SUSTAINING OUR ARMED FORCES IS NOW THE BIGGEST JOB IN PACKAGING; HERE'S WHAT THE QUARTERMASTER CORPS IS DOING

Opinions may vary on shaping America's military policies to keep pace with shifting global developments, but on one important question there is little disagreement: Military men must eat—and as long as it remains necessary for our armed forces to be ready for action in any potential theatre of war, packaging will play a fundamental role in keeping U. S. military men the best fed in the world.

At the Quartermaster Food and Container Institute in Chicago, this basic objective shapes and motivates a never-ceasing program of research and development. Although cut back to some extent after World War II, this activity has again been stepped up since the Korean conflict exploded just over a year ago.

The Korean struggle has highlighted some of the new packaging problems arising from fluid operations in an area of geographical and temperature extremes.

What the Quartermaster Corps does in packaging is important to the whole packaging field for several reasons.

Of the various military branches, the Quartermaster Corps' packaging requirements are most closely akin to those of the great majority of civilian commercial packagers; many of the latter, in any big-scale mobilization, may be called upon to devote at least

FLEXIBLE VACUUM PACK, used for the first time in QM packaging on this dehydrated meat bar. In a pouch laminated of foil, cellophane and Pliofilm, the dehydrated bars are sealed in a 15-in. vacuum.

Frigid Trail Ration

ADAPTATION of the ration and package to special feeding problems is apparent in the latest QM developments. Sealed in a vinyl-foil-scrim bag, each ration provides one man with three meals. Eight of the rations are shipped in a corrugated box with a protective outer sleeve.

WITH MITTENS on, a soldier can remove wrap, open box and eat contents, which are unaffected by extreme cold.

CORRUGATED BOX is 200-lb.-test, B-flute, closed with ordinary paper gummed tape. Adequate protection is maintained by the use of foil-laminated envelopes.

a portion of their facilities to Quartermaster packaging contracts.

Now supplying food and subsistence items to all three branches of the armed forces, the Quartermaster Corps is probably today the largest single user of packaging materials of many types; trends and changes in its specifications are vitally important in evaluating packaging-supply questions.

Finally, protective-packaging achievements born of the extremes of military necessity have often pointed the way to better civilian packaging; the Quartermaster lessons are highly valuable.

The Institute's facilities

Originally established in 1936, the Institute underwent a 15-fold expansion program during World War II. Late in 1945, packaging, packing and processing responsibilities for all Quartermaster supplies except fuels and lubricants were consolidated at the laboratory and it was redesignated the Quartermaster Food and Container Institute for the Armed Forces in March, 1946.

An important function of the Container Laboratories at the Institute is the review and revision of specifications for procurement directives. In one postwar year alone, 3,294 specifications were so handled. During the same year, 1,699 specifications were written for procurement directives; 641 Quartermaster Corps tentative specifications, joint Army-Navy specifications, U. S. Army and Federal specifications were handled, and 696 new specifications were developed. Simultaneously, more than 800 studies pertaining to use of alternate methods and materials for processing, packaging and packing were conducted.

The picture is constantly changing, for all rations, ration supplements and food packets are under the constant scrutiny of military analysts and food and container research and development workers.

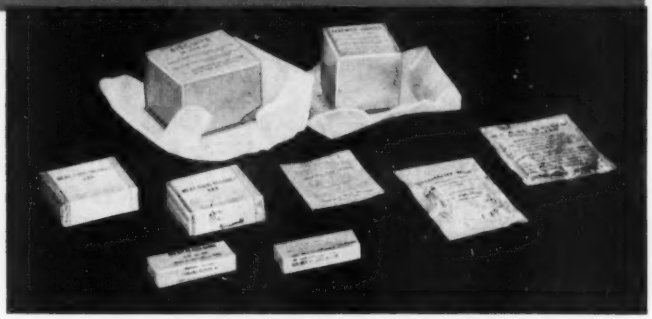
Activities of the Quartermaster Food and Container Institute are under the direction of Lt. Col. Joseph S. Kujawski, Commandant. The program of the Container Laboratories is headed by A. V. Grundy, Chief.

STORAGE AND HANDLING conditions for Quartermaster supplies which are encountered at this Korean base are better than average—but the necessity for using strong, weatherproof shipping containers is obvious.

Ration requirements

All armed forces, since time immemorial, have desired food in bulk to be transported as far toward the front as possible. In today's terminology this means a B-type ration. They have also required good, long-keeping foods

for arctic combat



COMPONENTS of the Frigid Trail Ration—a recent development of the Quartermaster Container Laboratory—include dehydrated meat bars, compressed cereal bars, biscuits, cookies and dehydrated soups. The biscuits and cookies are each packed in paperboard cartons with glassine liners and overwrapped with either waxed sulphite or waxed bleached kraft.

capable of easy preparation, packaged to permit easy handling and carrying either by motor transport or on the person.

But in today's highly mechanized warfare, many of the problems always associated with military food packaging have been intensified. Packaging must be more versatile. Foods must be packed to withstand the wet heat of the jungle, the dry-cold temperatures prevailing in the Arctic, the hot, dry Sahara and the mountain altitudes. Since special packaging for specific operational areas would greatly multiply the problems involved, this approach is generally avoided if possible. A notable exception to this rule is the new Frigid Trail ration, which is described later in this article.

Today's military rations are transported in relatively few hours from temperate to extremely hot or cold climates. Loaded on box cars at the point of manufacture, they may be unloaded at embarkation point, reloaded on ships, unloaded at debarkation points, reloaded on trucks, unloaded and placed in open storage, reloaded on trucks, unloaded again for jeep or man carrying, and eventually opened for feeding purposes behind a wall, in a foxhole or along a roadside.

To meet this variety of conditions, ration packages must be impervious to the deteriorative effect of water, moisture, gas, insect, mold and microbial attacks, extremes of heat and cold, rough handling, extreme vibration in transit over rough roads and storage under the most adverse of conditions.

This is a big order and the Quartermaster Container Laboratory frankly admits that it hasn't yet found all the answers. The important thing, however, is that progress is being made and that many of the rations now embody new packaging materials and techniques which increase their utility. It is notable that many of the latest operational rations, ration supplements and food packets employ polyethylene and other flexible packaging materials or combinations of materials which were either relatively unknown during World War II or have undergone great technical improvement since that period.

The over-all tightening of specifications may be seen by the fact that a temperature range of minus 80 to plus 160 deg. F. has been established as a desirable goal for all stowable military material, including food items. It is recognized, however, that with presently available packaging materials this range is virtually impossible to attain, particularly in regard to minimum temperatures. Minus 40 deg. F., on the other hand, is not beyond reach; a number of the tests conducted by the Food and Container Institute involve temperatures that low.

The Institute's greatest needs at the present time are instruments with which to test packages at temperatures of 80 below zero. A new cold room designed for this purpose is now under construction.

Three fundamental criteria must be kept uppermost by the Container Institute in its work with military ration packages. These are (1) utility, (2) manufacturing practicability and (3) preservation of contents. Utility includes the convenience with which a package may be transported and stored and the ease with which it may be opened and used by military personnel.

Manufacturing potential involves such factors as the availability of a given packaging material, its cost and its adaptation to fabrication on such machinery as is generally available. Preservation of contents is, of course, absolutely basic. Without it, any ration package is worthless.

Nothing like the can

It should be pointed out that the amount of space devoted to flexible packaging developments in this article in no way reflects upon the role of the metal container in the military feeding program. The can still reigns supreme in the packaging of numerous rations and ration components; it is the workhorse of ration packaging, for which no satisfactory substitute has yet been brought to the production stage.

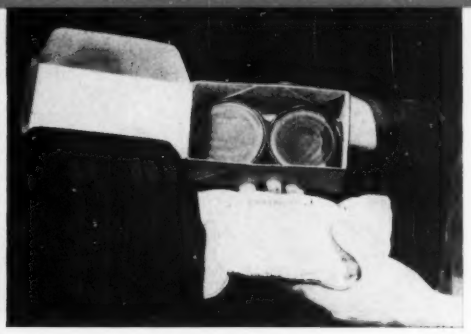
Used widely during World War II, as well as in the first World War, the can continues as a "must" for many types of processed foods, thanks to its ability to withstand processing temperatures and the rugged transport and storage conditions mentioned above.

An important development in this connection, which the Quartermaster is watching closely, is "Operation Survival," spearheaded by American Can Co., which involves the use of an organic coating instead of tin to protect the steel base and contents of metal cans. Containers thus made utilize a special plastic cement to replace solder for the side seam and are virtually tinless.

The increased mobility of modern warfare has focused attention on compact, light-weight rations and ration supplements which can be conveniently carried and used by individual military personnel or small groups. It is in connection with items of this type that flexible packaging materials have enjoyed their greatest development. These materials, used singly or in combinations to suit the end-use requirements, are also widely employed in the present operational rations for unit packaging of single items, such as

Foxhole food for the

POCKET MEAL is the 1A Ration designed to be carried by troops in the early stages of invasion and attack. Note water-vapor-barrier liner used in this shipping case for 24 packages.



FOLDING CARTON with hinged lid, for easy opening, contains one can of meat, one can of biscuits and cookies, together with a compact accessory packet.

soluble coffee or modified milk, sugar, dehydrated soup mixes, etc.

War is specialized

With the increasing complexity of modern warfare, the functions of the fighting man have become highly specialized. One man may be a member of an anti-aircraft gun crew; another, a foot soldier. High above them soars a jet fighter pilot, his transparent plastic canopy bounding a world apart as he carries out his 500-m.p.h. mission. All these men, plus many other types of "specialists," must be fed, and no one ration, no one package, can bracket their diverse requirements.

Much of the recent work of the Quartermaster Container Laboratory has involved the development of special-purpose packages. One of the best examples of specialized packaging to overcome new problems of climate and geography is the recently adopted Individual Frigid Trail ration, which had no counterpart among those used during World War II. This ration was designed for use in extremely cold climates by small patrols or trail teams under conditions where resupply may be impossible for periods up to seven days and where sources of heat for cooking are either limited or not available. Packed in a corrugated fibreboard box protected by a waterproof bag, the ration contains three meals which may be eaten either hot or cold. Included in the ration are meat bars, cereal bars, raisins, almonds, sandwich cookies, crackers, chocolate, assorted hard candies, dehydrated bean soup, dehydrated chicken soup and a beverage packet containing bouillon powder, soluble coffee and tea, sugar tablets, dried, sweetened milk, candy-coated gum and matches.

Successful packaging of the Frigid Trail ration required an understanding of the food items used, the military factors which the items must possess and the packaging factors that would aid in maintaining the stability of the items and assure ease of use on the trail. High palatability, minimum weight and bulk in relation to energy and nutritional values were important considerations. It was also essential that the ration could be consumed either hot or cold, and in either case prepared with the least possible labor and equipment. Since the ration is carried on the person in addition to other supply and equipment items, its total weight is only 3 lb., 10 oz. Another packaging consideration was the fact that the ration had to be easily handled despite the heavy clothing and cumbersome glove protection required in Arctic regions.

Packaging of the new ration also had to meet other stiff requirements. It must, for example, protect the contents against snow and sleet driven by winds of velocities up to 110 m.p.h. and withstand the type of handling entailed in air delivery of supplies. The materials used in the containers could not be conducive to "freeze burn" when brought into contact with the lips or bare skin. Easy opening was another fundamental requirement.

Each complete ration is packed in a carton made of 200-lb.-test, "B" flute, corrugated boxboard, closed with gummed kraft tape. For further protection, each carton is enclosed in a waterproof bag measuring approximately 14¾ by 11⅝ in., with heat-sealed sides and bottom and a heat-sealed closure. The outer bag, under present specifications, may be fabricated from one of several types of laminations involving vinyl film, aluminum foil, polyethylene film and cloth, with the cloth on the outside. A typical lamination consists of 0.002 polyethylene film to 0.001 aluminum foil to cloth.

Flexible vacuum package

Of particular interest from the packaging standpoint is the 5 oz. meat food bar component which provides 1,500 of the 4,600 calories in the total ration. This product, developed in cooperation with Wilson & Co., Inc., is compressed under 1,200 to 1,400 lbs. of pressure and packed in a laminated pouch composed of 0.0005 aluminum foil, 300 MST cellophane and 120-gauge Pliofilm. The package is heat sealed in a vacuum chamber with a vacuum of not less than 15 in. Each package is readily identified as to contents by a printed wrap-around label. Flavors are distinguished by different-colored labels as well as by printed designation.

This vacuumized flexible package—the first of its type used in U. S. military rations—is light in weight, compact and requires no critical tin or steel. It permits handling, storage and distribution of the product under a

INSIDE WALL of can for cookies is lined with corrugated glassine, parchment or greaseproof paper; it protects flavor and cushions.

ACCESSORY PACKET is laminated kraft and foil with a heat-seal coating. The packet contains the usual sweets, coffee, sugar, cigarettes, etc., plus a 1½-mil polyethylene bag to protect leftovers.

wide range of temperature and humidity conditions, and gives effective protection from water vapor and oxygen. The equipment on which this package is handled is basically similar to that used by meat packers in the vacuum packaging of luncheon meats,* modified to meet the specialized requirements involved.

Another compressed item for the Frigid Trail ration, involving packaging techniques somewhat different from commercial practice, is the pre-mixed cereal block. This processed corn and soya product is low in moisture content (5% by weight). One and one-half ounces of the pre-mixed cereal is compressed into a block measuring 1¾ by 3¾ by ¾ in. in size, tightly wrapped in a sheet of dry finished aluminum foil 0.001 thick, with closure effected by pressing the end folds against the ends of the bar, without sealing. This conforming wrap covers the bar completely.

Other items in the Frigid Trail ration are variously packaged. The almonds, chocolate caps and pan-coated chocolate drops are sealed in envelopes composed of 35-lb. kraft paper coated with 0.001 polyethylene. These products require a packaging material combining low-temperature flexibility, moderate resistance to WVT and grease resistance.

The sandwich cookies are packed in a folding carton with single-faced, corrugated glassine liner covering all interior faces of the carton, which is then overwrapped with a sheet of waxed sulphite or waxed bleached kraft. The soup mix and bouillon are packed in heat-sealed envelopes composed of cellulose acetate film laminated to aluminum foil, coated on the foil side for a moistureproof heat-seal closure.

In the soup mix with chicken, the requirement is for low WVT to protect the product, plus additional protection against oxygen and fat penetration. For the dehydrated pea and bean soup mixes, the requirement again is for low WVT, obtained through the use of 0.001 aluminum foil laminated to 0.0015 vinyl film. Flexibility of the packaging material at low temperatures is a primary requisite to resist damage under rough handling. Dehydrated onions used in the Frigid Trail ration are packed in a foil envelope made from dead soft aluminum foil coated on one side with a heat-seal coating; this package must prevent onion odors from permeating other ration components.

Test procedures

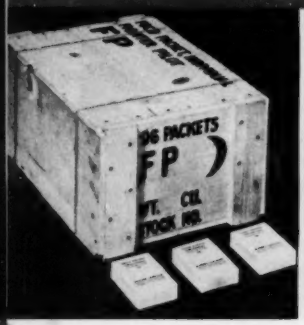
Tests conducted by the Quartermaster Container Laboratories in connection with bags used for candies, cocoa powder and nuts in the Frigid Trail ration and for cocoa powder and sugar in the 5-in-1 ration (used for small detachment feeding operations under certain conditions) typify some of the problems faced by the laboratories and how they are approached.

The materials were tested by fabricating them into bags filled with the specified contents, including them in Ration AT-1 (Frigid Trail) and dropping the case of rations from a height of 30 in. at a temperature of minus 40 deg. F. These tests were conducted to see which of the materials examined were most acceptable for the special packaging requirements—moderate WVT and low-temperature flexibility to withstand rough handling at very low temperatures. The materials are identified and results

IMPROVED foil laminations, many of which now incorporate polyethylene, are said to provide dehydrated soups that will reconstitute immediately in water and taste just like fresh soup.

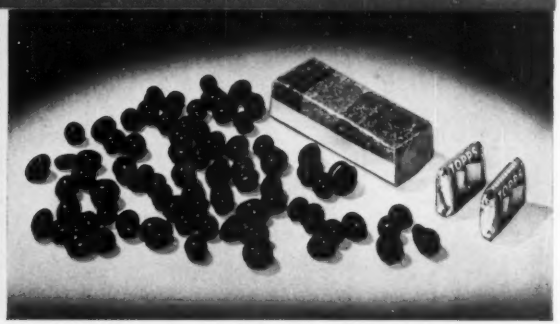
* See "Everything but the Squeal," MODERN PACKAGING, Sept. 1950, p. 89.

One-hand meal for the jet pilot



ULTIMATE in ease of handling is FP Ration, designed for the fighter pilot to consume in the air.

CARTON can be opened and the food extracted by pilot while keeping one hand on controls.



COMPONENTS of the FP Ration include jelly candies on a paperboard tray, coated candies and candy-coated chewing gum. These items furnish quick energy for the pilot and have minimum ill effect when carried at 500-m.p.h. high-altitude speeds.

summarized in Table I. The only combination successfully passing this test was the polyethylene-coated kraft. Although the test consists of one cycle of 10 drops, one type of such material comprising 64 bags was carried through five cycles without damage. Of the other types of bags tested, many split and shattered, delaminated and tore.

Waterproofness as well as sub-zero flexibility is an important requisite of other bags used in the Arctic and in 5-in-1 rations and several ration supplements. Various materials examined were made up as packages and then stored at minus 40 deg. F. for 24 hrs. Then complete packs were drop tested from a 30-in. height. A 10-drop cycle was used, in accordance with Procedure A of ASTM D-775, 45-T. The pack was then opened and the bags inspected visually for each individual ration. After visual inspection, each ration was submerged under water and turned so that each face, corner and edge were uppermost, to determine leakers. Materials used in the test included various combinations of Pliofilm, aluminum foil, scrim, vinyl film, polyethylene film and kraft paper.

Although functionally satisfactory, materials containing kraft paper were ruled out because they were too stiff and bulky for assembly operations. The only materials found to deliver satisfactory performance in the tests of waterproofness were the following: (1) a minimum of 0.001 vinyl plus 0.001 aluminum foil plus 0.001 vinyl plus scrim; (2) a minimum of 0.001 vinyl plus 0.001 aluminum foil plus 0.001 polyethylene plus scrim; (3) a minimum of 0.002 polyethylene plus 0.001 aluminum foil plus scrim.

Tests of available packaging materials for specific ration uses form an important part of the Laboratory's program, since they often make it possible to prepare alternate specifications and simplify the procurement problem. Sometimes, however, the tests show that no satisfactory alternate materials are available.

During World War II, troops consuming individually packaged rations had to drink their coffee black. Since that time, the Quartermaster has developed a dehydrated, modified semi-sweetened whole milk, dispersable in coffee or tea, which is now included in various rations. Since moisture protection is very important to prevent the fine powder from caking and flavor loss, packets composed of a foil-acetate lamination, similar to those used for soluble coffee, have proved most acceptable.

Under the specifications for this product, if more than 5% of the envelopes show leakage under test, the entire lot is rejected. The test consists of partially filling a glass vacuum desiccator with water at room temperature and submerging one or more envelopes. The lid is then replaced and a vacuum of at least 10 in. of mercury drawn and maintained for at least one minute. Leakage may be detected by the presence of air bubbles.

While standardization of materials is desirable and is under constant

TABLE I — MINUS-40 DROP TESTS ON ARCTIC RATION COMPONENTS

Bags of candies, cocoa and almonds in case of AT-1 rations dropped from 30 in. at minus 40 deg. F.

Material	*Test results*
0.001 in. polyethylene coated to 35-lb. kraft	64 bags carried through five cycles without damage
0.001 in. polyethylene laminated to 35-lb. kraft	16 bags drop tested one-cycle 100% delamination
0.002 in. saran coated to 30-lb. kraft	40 bags drop tested one-cycle 100% failure, split and shattered
0.001 in. 517S saran laminated to 30-lb. opaque kraft	40 bags drop tested one-cycle 100% failure, split, shattered, torn and some delamination
140-gauge F.F. Pliofilm laminated to 35-lb. kraft	32 bags drop tested one-cycle 25% failure, spilt, torn and some delamination

scrutiny by the Container Laboratory, it must also be remembered that both under- and over-packaging are to be avoided. For this reason, examination of the present rations reveals a wide variety of flexible packaging materials, each particularly suited to a particular job.

For example, cigarettes and gum, included in accessory packets for the individual combat ration and individual assault packets, require good moisture protection. The packets used are of 0.0007 aluminum foil laminated to 30-lb. kraft, with a heat seal. Utility bags for individual assault food packets, individual survival packets and lifeboat rations, which must combine flexibility, toughness and waterproofness, are of polyethylene film. Polyethylene film (0.0015 gauge) is also used to package the plastic sippers included in certain rations; here the special requirement is protection against contamination prior to use. Toilet paper when supplied to a group must be protected against weather in the field. In the small-detachment 5-in-1 ration and several other supplements and special packs, the paper is packaged in asphalt-laminated kraft or 0.002 polyethylene.

Packaging of all these non-food items is being reviewed in the interest of standardization of packaging and conservation of materials.

Special conditions

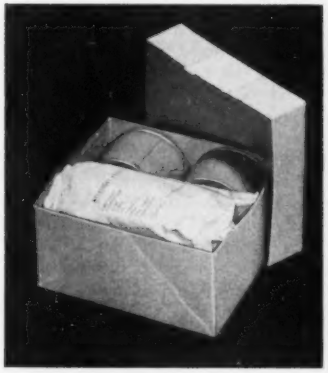
How package design and construction can be adapted to meet special service conditions is illustrated by the Air Crew Lunch, which was designed for pilots of single-seat or fighter-type aircraft participating in flights extending over three hours or spanning one or more meal periods. The small carton, containing chocolate bars, gum and assorted candies, is made so that it can be opened and closed with one hand. A jet pilot can conveniently eat the contents without releasing the controls. The package is also properly sized to fit the flying-suit pocket.

In the Food Packet, Individual, Combat, In-Flight, intended for passengers and crews of bomber type aircraft and transports in flight for periods extending over one or more meals, all components are packaged in a telescoping carton which may be used as a tray and later as a receptacle to dispose of waste.

Another functional package developed by the Container Laboratory is that used for the Individual Survival Packet, SA, designed as the food component of survival kits carried aboard military aircraft operating over Arctic regions. For storage aboard aircraft, three of the packets are placed in the parachute pack formed (*This article continued on page 166*)

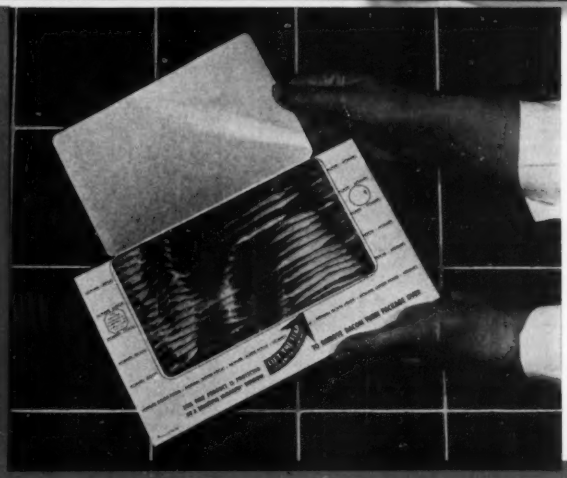
FRIGID TESTING at minus 40 deg. F. in Quartermaster Container Laboratories to establish strength of ration-package components. Many otherwise adequate laminations were found to embrittle when subjected to extreme low temperature. Some comparative results are shown in Table I.

IN-FLIGHT RATION for plane passengers and crew members uses telescope-type carton that serves as a tray.



THE CAN IS VITAL in the packaging of long-term preservation units such as this Individual Survival Ration. The flat, convenient, key-opening can contains a surprisingly great amount of nourishment in a pocket-sized space.

WINDOW WITH A SHADE



LIFT-UP FLAP HINGED OVER ACETATE WINDOW NEATLY SOLVES LIGHT-VS.-VISIBILITY DILEMMA

PHOTOS COURTESY WESTERN WAXED PAPER CO.

IT'S AN OPEN-AND-SHUT CASE for Hormel's sliced bacon. Closed, the hinged flap shields the meat from light and gives good brand display and appetite appeal. When it is opened, the acetate window permits inspection of fat and lean that housewives insist upon.

Picture-window visibility without sacrifice of lightproof flavor protection is the feature of an ingenious new type of sliced-bacon package of which Geo. A. Hormel & Co., Austin, Minn., has become the first user. First launched by Hormel a short time ago on the West Coast, on its popular Minnesota brand bacon, the new package is now being introduced in other distribution areas served by this large independent packer.

The new one-pound package, developed over a period of a year and a half in cooperation with public health specialists, was designed to reconcile two of the knottiest problems involved in merchandising packaged sliced bacon. Inasmuch as the flavor of the product is adversely affected by exposure to light, maximum protection favors a non-visual type of package or wrap. From the merchandising standpoint, however, especially with today's emphasis on open display and self service, it is desirable that the customer be able to see the bacon; most shoppers insist on seeing for themselves whether the bacon is "fat" or "lean."

Some packagers, utilizing a transparent overwrap in combination with various types of backing boards, have gone almost completely visual in order to give the buyer an unobstructed view. At least one major packer utilizes a wrapper which is opaque on the top surface, to prevent light from reaching the bacon, but contains a transparent section on the underside, so that several slices of bacon may be seen by turning the package over. At the other end of the scale are completely "blind" packages which depend upon attractive surface design and confidence in the packer to assure the buyer that she is obtaining a quality product.

Research by various packers has brought out the amusing fact that the ideal conditions under which such products as sliced bacon and sliced luncheon meats should be sold would be in the dark. But since ample lighting is virtually a must for modern retail food stores, any light protection which the bacon gets in the stores must be built into the package or gained through some shielded method of display.

Hormel's new package follows the entirely new approach of "optional" visibility, permitting the bacon to be examined without even picking up the package—but keeping a "shade" over the window at all other times. A generous-sized acetate window, measuring 7¼ by 4¼ in., is built into the top surface of the package, but, except when deliberately exposed,

it is completely covered by a flap that is die cut on three sides and scored at the top to fold back like a hinge. This flap is an integral part of the semi-rigid paperboard outer surface of the package; it is the part that in an ordinary window package would be completely cut out and discarded. The underside of the package, completely opaque, is closed by means of a tuck-in flap of special lock design which discourages premature opening of the package in the retail store. This is important because even with good-sized windows, some shoppers will try to open a package and sniff the aroma of the bacon—a practice which health authorities naturally do not like.

Except for the window and the new-type closure, Hormel's new bacon package is similar in construction to a package previously used by the company, but utilizes heavier materials to meet the demands of self-service merchandising. This type of package, which has been in use for some time by a number of packers* is now composed of a sheet of 25-lb. opaque waxed glassine laminated to 120-lb. white sulphite board which forms the outer surface of the package and contributes most of its physical strength. The inner sheet of waxed glassine extends beyond the sulphite board at each end, permitting the glassine to be folded back over the ends of the slices before the flaps of the package are closed. Lamination of the glassine and sulphite board is performed during a submerging operation, utilizing a special blend of waxes which is unaffected by bacon grease.

The cellulose acetate film used for the window of the new package is greaseproof, resists ordinary handling without damage and is non-fogging. It is pointed out that this package requires only about one-fourth as much of the scarce transparent material as would be needed for a complete overwrap.

All corners of the die-cut window are rounded to eliminate any possiblility of tearing at the corners. After considerable experimentation, the hinge portion of the flap was placed directly on the score edge of the package; it was found that the curve at the end of the hinge diverted stress across the grain of the board and minimized the possibility of tearing when the flap was lifted back.

The new locking tab, believed to be the first of its type used on a bacon package, was preferred to a heat seal by the Los Angeles Board of Health, which pointed out that women were less likely to open the tab than to tear open a heat seal.

Hormel's package is printed by rotary letterpress in four colors, with label elements in red against a bright yellow background. The appetizing cooked-product illustration used on both the window flap and the reverse side of the package features a gray-bordered white platter filled with strips of fried bacon.

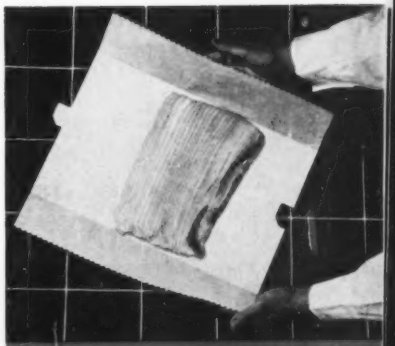
The phrase "Hormel Good Food" forms a repeat pattern on the yellow package surface, facilitating immediate product recognition and adding an interesting design detail. "Hormel Sliced Bacon," in prominent capital letters, appears on the front and back edges of the package, which are ½ in. in depth. An arrow on the top panel, just beneath the observation window, calls attention to this new package feature and tells the observer to "Lift the flap to view the contents." Accompanying copy points out the protective feature of the acetate window and instructs the user to turn the package over in order to remove the bacon. A circular price patch and the U.S. meat inspection legend flank the window opening on the top panel of the package.

Sturdy to permit handling and carrying, the new Hormel package is also easy for the housewife to use. In opening the package for removal of slices, the user merely slides open the special locking tab, permitting the package to be opened up like a book. Then the greaseproof inner wrap covering the ends of the bacon is opened back and the desired number of slices removed. The compact package is also ideally suited for storing unused slices of bacon, since it can be firmly reclosed by folding the liner back in position, closing the flap and inserting the tab again.

When the locking tab is slipped out to open the package, a white strip on the inner flap is revealed which carries the following copy: "Light and air harm bacon! . . . Keep this package closed to protect the flavor and texture of this product."

Adaptability on the packaging line is one of the features of the new

(This article continued on page 170)



PACKAGING is a simple hand operation. Shingled slices of bacon are positioned on the flat laminated sheet, over window area.

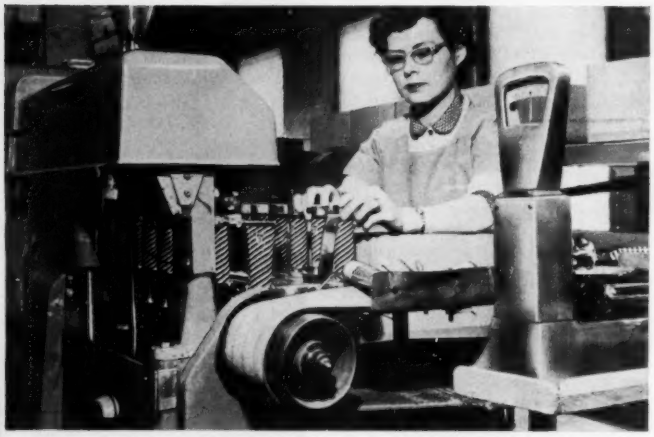
FOLDS ARE MADE with a quick motion, turning side sheets in and back flap over. Note printed message on light protection.

FLAPS ARE LOCKED with a simple twist that slips tab into angled slot, where it is held by engagement of a slit in the tab.

* See "Wrap-Carton—A New Kind of Package," MODERN PACKAGING, Aug., 1945, p. 114.

Flexible tube-filling lines

WITH SIX MACHINES IN A 20-BY-30 SPACE, MENNEN FILLS THREE PRODUCTS ALTERNATELY IN FOUR TUBE SIZES AT A RATE OF 300 A MINUTE



COMPACT FILLER is under close control of operator who places tubes in cups two at a time. Filled tubes are automatically dropped on belt in the foreground, which removes them to master conveyor for cartoning.

Fluidity and rapid convertibility are frequently more important in a packaging operation (depending, of course, on production requirements) than are high production speed and maximum mechanization. Often some sacrifice of flexibility is required if utmost speed and mechanization are demanded.

The Mennen Co., in Newark, N.J., through compact layout and ingenious use of equipment and conveyor systems, has managed to achieve a tube-filling operation that is an outstanding example of flexibility combined with a high degree of mechanization and a very satisfactory production speed.

The company currently operates two tube-filling lines, handling two types of shaving cream, packed in four different sizes of aluminum tubes, and also a baby cream. Change-over on each of the two lines occurs frequently. Change-over time including flush-down is about 45 minutes. Output per line, each including a battery of three tube-filling machines, is 150 tubes a minute, which is sufficient production for the automatic cartoning machine in each of the lines.

Three operators are required on each line to place tubes in the intake cups of the filling machines. Tubes are then automatically cleaned and filled, caps tightened, ends crimped and code stamped, and filled tubes discharged onto a conveyor belt.

The product is fed by gravity from storage tanks, each located directly above the six filling machines in the two lines. The filling machines employ a single-cylinder stainless-steel pump to meter and fill the product into the tubes.

The 75-year-old Mennen company now carries on its many operations in a plant where practically every available inch of floor space is efficiently utilized. Adding to the problems of expanded production in unstretchable quarters is the fact that warehousing facilities are located five miles distant from the main plant. Consequently, packaging supplies must be brought in by truck daily and finished products trucked away each day.

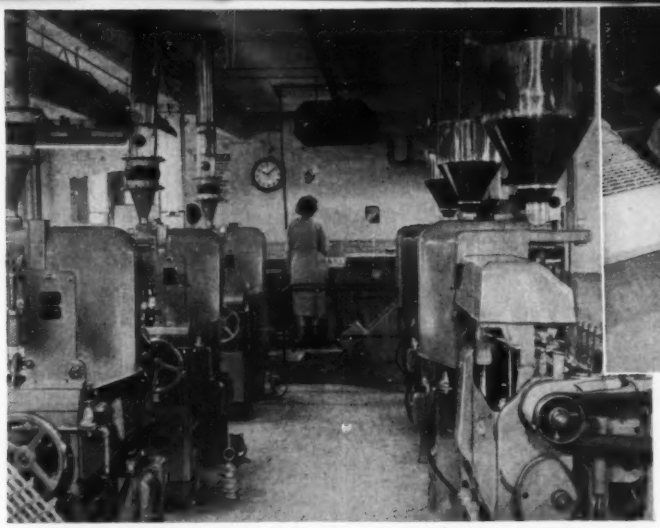
Construction of a new modern plant in Morris Township, N.J., is soon to get under way. The new plant is being laid out to accommodate 11 complete packaging lines for the various Mennen products, which include talcum and foot powder packaged in metal cans; skin bracer, hair oil and baby oil packaged in glass bottles; deodorant and baby lotion in squeeze bottles and two types of shaving cream and a baby cream in collapsible tubes.

In laying out the present tube-filling lines, Mennen was confronted not only with the difficulties of its present crowded facilities, but also with the problem of establishing lines that would be practical for transfer with minimum change to the new plant.

The two tube-filling lines, producing a total of 300 packages per minute, presently occupy a floor area that is approximately 20 ft. wide by 30 ft. long. The lines, which run in opposing directions, owe their efficiency and compactness to the clever space-saving conveyor system that brings unfilled tubes to the filling-machine operators and removes emptied tube containers and the filled tubes.

Nests of empty tubes are brought by booster conveyor to the third floor, where the filling is done, and are discharged onto the top belt of a three-level conveyor system that runs directly in back of the girls who feed the tubes into the cups of the filling machine. Empty nests are carried away by the bottom belt of the conveyor and are discharged onto a chute for return to the second-floor storage area. These powered belts are shut off and on as needed by the operators of the filling machines.

Filled tubes are automatically discharged from the filling machine onto a belt that feeds them onto the middle belt of the three-level conveyor. The tubes are automatically oriented by a guide bar so that the capped



EFFICIENT LAYOUT solves space problem. Six tube fillers in two lines of three each receive product from overhead storage vats, while tubes are delivered and taken away by triplex conveyor behind each line.

FLEXIBILITY of filling operation is assured by simplicity of equipment and methods employed. Operator gets trays of empty tubes from top belt of conveyor behind her; filled tubes are automatically carried away.

PHOTOS COURTESY THE MENNEN CO.

THREE-LEVEL conveyor is secret of compact efficiency. Top belt delivers trays of empty tubes to fillers; middle belt carries filled tubes to cartoner; bottom belt returns empty trays to storage. One conveyor of this type serves each of the lines.

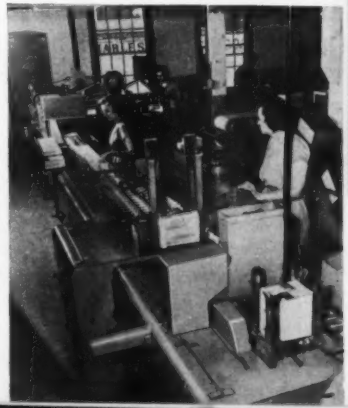
ends of the tubes all point in the direction of flow. The guide bar also keeps the tubes from each filler in separate lines on the way to the cartoning unit. This permits quick, easy manual transfer of the tubes from the conveyor belt to the intake feed of the automatic cartoner.

After cartoning, the cartons are bundle-wrapped and a bundle end label is applied. Bundles are discharged into a gravity chute that takes them to the floor below, where they are manually packed in a shipping carton. When the cartons have been run through the carton sealer and coded, they are loaded on pallets for shipment to storage.

Mennen reports that its complete tube-filling operation is dependable and easy to maintain, as well as flexible and efficient. Sources of faulty operation are at a minimum and should one filling machine be down for any reason, the other five machines keep a high rate of production going. Output, also, can be accumulated at several points in the line so that other machines can be kept operating in the event one piece of equipment, such as the cartoner or bundler, goes down momentarily.

Accuracy of tube fill is found dependable. The filling-machine operators have over-and-under scales at their work stations for frequent checking of the tubes. The average rate of speed for each operator, 25 trips of two tubes at a time per minute, has been found an efficient yet comfortable pace. Filling machines operate on a no-tube, no-fill principle and the cartoner is equipped with a similar device.

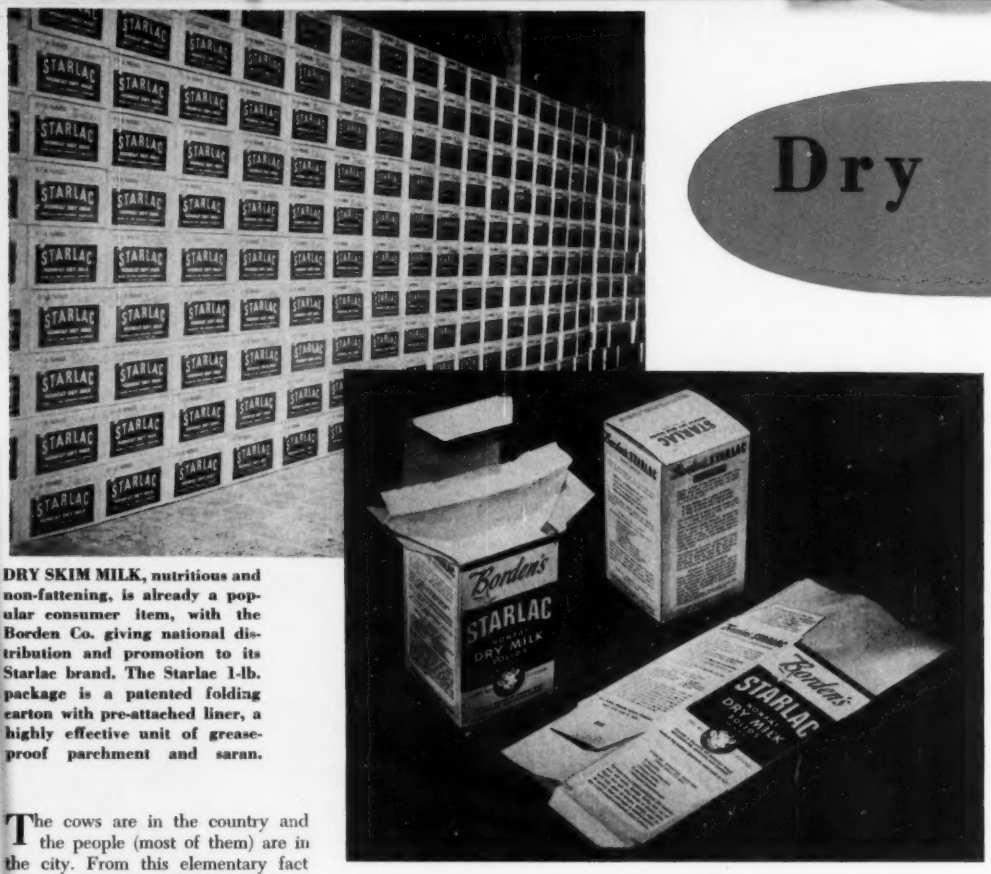
CREDITS: *Tube fillers, Arenco Machine Co., Inc., New York. Cartoner, R. A. Jones & Co., Inc., Cincinnati. Bundler, Package Machinery Co., Springfield, Mass. Case sealer, A-B-C Packaging Machine Corp., Quincy, Ill. Tubes, Peerless Tube Co., Bloomfield, N. J.; Victor Industries Corp., Brooklyn, N. Y., and Sun Tube Corp., Hillside, N. J. Caps, Mack Molding Co., Wayne, N. J., and Victor Industries Corp. Conveyors, Duane Machinery Corp., Long Island City, N. Y.*



PRODUCTION FLOWS continuously from fillers to cartoner (foreground) to bundler (rear). Accumulating stations at various points permit uninterrupted packaging if one piece of equipment goes down momentarily.

FILLED TUBES are oriented by guide bars so that caps all point in direction of flow. This speeds transfer of tubes into pockets of the cartoning machine.

Dry



DRY SKIM MILK, nutritious and non-fattening, is already a popular consumer item, with the Borden Co. giving national distribution and promotion to its Starlac brand. The Starlac 1-lb. package is a patented folding carton with pre-attached liner, a highly effective unit of grease-proof parchment and saran.

The cows are in the country and the people (most of them) are in the city. From this elementary fact stems much of the difficulty of getting fresh milk to the ultimate consumer in convenient form and at reasonable cost.

With due respect to the excellent service performed by milk producers and dairies, the fact remains that fluid milk is a relatively difficult and costly food to package and distribute due to its bulk, its highly perishable nature and the need for continuous refrigeration. It is not surprising, therefore, that much thought is now being given to new processing techniques which will yield a concentrated product, more easily stored, transported and sold through modern food-merchandising outlets. Two such products—a liquid milk concentrate and a frozen chocolate milk concentrate—were described in these pages recently.*

In this continuing effort to increase the convenience and economy of milk supply to the consumer, the position of the dry milks (whole-milk powder and non-fat dry-milk solids) should not be overlooked. These products have been widely used in commercial food processing for a number of years, but up to the present have played only a minor role as a packaged consumer item in this country—although long important in the export market.

With at least one national organization now promoting its brand of non-fat dry-milk solids on an extensive scale and a number of other producers active in more limited markets, a review of current packaging practices in this field is in order.

Proper packaging is recognized as a primary requisite in building market acceptance for dry-milk products. This is true not only from the standpoint of product protection, but also as a merchandising aid. Since the general public is still not fully familiar with these products and the many ways they can be used in the home, the package must do a fairly complete selling job on its own. For this reason most of the package surface is usually devoted to detailed instructions on product use, along with information on food value, economy, convenience and other virtues. At least one large producer includes within the package a folder containing additional information.

Early in 1945 the Bureau of Agricultural Economics, U. S. Department of Agriculture, conducted a survey of retail distribution and consumer acceptance of dry milk in Houston, Tex., normally classified as a "deficit" milk-producing area. The resulting report† was based on interviews with retailers handling products of this type and with consumers who had purchased either the whole-milk powder, non-fat dry-milk solids (skim milk) or both. It was intended to show the market position of dry milk as a packaged consumer product and to indicate its possible future acceptance.

In the intervening period, con-

* See "Concentrated Milk," MODERN PACKAGING, March, 1951, p. 88.

† See "Dried Milk," MODERN PACKAGING, Dec., 1945, p. 110.

milk: problem child

CONSUMER DEMAND IS PUSHING THIS PRODUCT ON THE U. S. MARKET AND CHALLENGING LOW-COST PROTECTIVE PACKAGING

sumer-packaged dry milk has come along rather slowly, being best known in those areas which, like Houston, consume more milk than is produced locally. In some of the Southern states, the product has built up a fairly good market acceptance. In sparsely settled areas, such as some sections of Canada, dry milk offers one solution to seasonal fluctuations in the fluid-milk supply. Until very recently, however, there has been relatively little broad-scale promotional effort by producers to expand the consumer market for dry-milk products. A major factor in the heightened public interest in non-fat dry-milk solids was the recent publication of Gaylord Hauser's book, "Look Younger, Live Longer," in which the author vigorously recommends its use in reducing diets.

Distribution figures tell the story of the rapid recent progress of non-fat dry-milk solids as a packaged consumer item. According to The American Dry Milk Institute, Inc., approximately 17 million pounds of consumer-packaged non-fat dry-milk solids were sold domestically in 1950, an increase of some 11 million pounds over 1949. The 1949 figure, in turn, showed an increase of 3.5 million pounds over 1948. Of the total 1950 domestic distribution of non-fat dry-milk solids, which reached 518 million pounds, three major commercial outlets—the bakery, dairy and meat fields—accounted for 84% of total end usage. Among all other end-use categories, sales of the consumer-packaged product registered the largest gain over the preceding year.

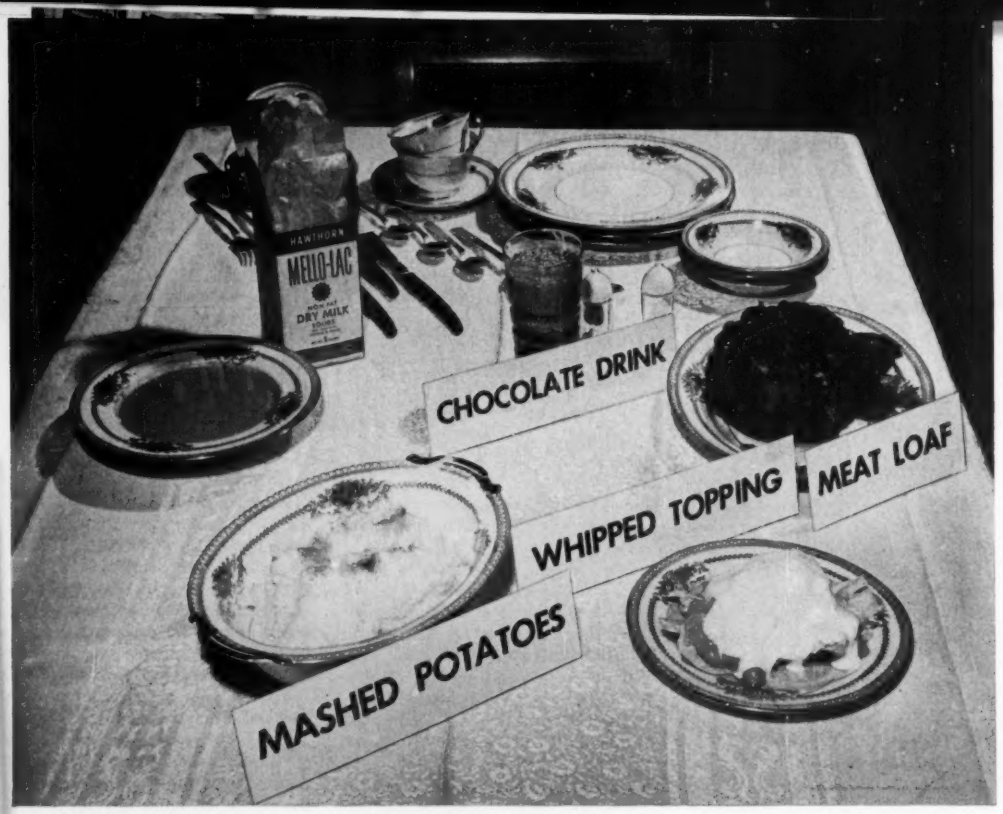
There is still an important public relations job to be done—that of educating the consumer away from the earlier attitude toward "skim milk" and building an understanding of how this nutritious, economical product can be employed in the preparation of beverages, biscuits, puddings, cakes, cereals and other foods. The convenience of the product, including the fact that it can be stored for extended periods without refrigeration, must be brought home more fully to the potential user. Its adaptability for campers, section hands and others temporarily out of contact with regular fresh-milk supply sources has never been fully exploited.

To the general public, the term "dry milk" may be somewhat confusing, since it covers two distinct types of product. In making *whole-milk powder* only the water is removed, leaving the butterfat content present in the same relative proportion as in the fluid milk from which it was made. In *non-fat dry-milk solids*, the fat content as well as the water is removed, resulting in a product which, when reconstituted, is as nourishing as regular whole milk except for the absence of butterfat.

Many of these products are now fortified by addition of Vitamin D. On consumer packages, labels clearly

FRACTIONAL PACKAGING in convenient units is used by several producers. Sanalac carton contains three heat-sealed cellophane bags; note effective cutout through three milk bottles in side panel to dramatize the fact that each bag makes a quart of milk. The small packet illustrated at the right is acetate-foil type which is used in military rations.

ECONOMY is a must—yet moisture pick-up must be prevented. Hawthorn (right) uses a laminated Diafane bag in a tuck-end carton and finds that the shelf life is at least six months. The type of packaging used for Cloverleaf is a glue-sealed carton with contents in a two-compartment Pliofilm bag, which user can cut apart.



VERSATILITY of dry-milk powder is illustrated by this Hawthorn-Mellody Farms picture showing the varied uses of its Mello-Lac in a single meal. Actually, the reconstituted dry-milk powder can be used wherever fresh milk would be used.

state which of the two types of dry milk is present in the container. The whole-milk powder, costing approximately three times as much as non-fat dry-milk solids, has not been actively promoted as a consumer item in this country, although several producers have built up a fair export volume.

Packaging differences

Packaging requirements differ for the two types of products. Whole-milk powder must be protected against both moisture and oxidation of the fat content, while with non-fat dry-milk solids moisture is the principal difficulty. For whole-milk powder, the customary container is a hermetically sealed metal can, with oxygen reduced to a very low concentration as an additional safeguard. Under average storage conditions, the shelf life of whole-milk powder thus packaged is from six months to a year.

Among the organizations producing whole-milk powder is Golden State Co., Ltd., San Francisco, which packs the product in metal cans of the key-opening type with lithographed paper labels. Consumer packages of 1-lb., 2½-lb. and 5-lb. size are offered. The containers are gas packed to reduce the oxygen content below 2%.

The label, printed in red, white and black on a yellow background, includes a reminder that the container should be kept tightly covered after opening. Since the sale of this product is almost worldwide, instructions and production information are in English, German, Afrikaans, Spanish, Portuguese and French.

This company also makes a special form of non-fat dry-milk solids under the name of Tekko, packed in 1-lb. tins with a white and green wrap-around label.

Kraft Foods Co. also produces powdered whole milk, gas packaging it in key-opening 1 lb. and 2½ lb. cans lithographed in orange, blue and black. The Kraft name and monogram are highlighted in a white panel on the display side of the container, while two other printed panels, one in English and one in Spanish, give the approximate analysis of the product and instructions for use, along with directions to keep the cover tightly closed. This moves into export as well as domestic markets.

Packaging practices on non-fat dry-milk solids are much less standardized than for the whole-milk powder. Many producers, it appears, are not fully satisfied with their present package and are attempting to improve it, although handicapped by the present availability of some of the newer plastic films and barrier materials. Package material suppliers as well as producers of the non-fat dry-milk solids have conducted considerable research in the interest of package improvement, but specific results of much of this activity will not be available for publication until findings have been translated into commercial use.

The packaging problems

Moisture pick-up is the most serious problem to be overcome in packaging this material. The Federal

standard covering non-fat dry-milk solids specifies a moisture content of 5% as the maximum that can be allowed; since the moisture content is usually 3% when the product is packed, an additional pick-up of 2% is the most that can be permitted. As the moisture content increases, the product goes "stale" and also tends to cake, making it more difficult to measure accurately and reconstitute without getting lumps in the fluid product. So great is the affinity of the fine white powder for water that it tends to dry out and embrittle some types of packaging materials by drawing moisture from them.

Sifting is another serious problem, due to the extremely small size of the dry-milk particles. Since most of the outer cartons used for this product are of the folding type, the inner bag is the only real protection against sifting. Accordingly, the bag must be of a material which will not only provide the required moisture protection, but will also resist breakage in the course of normal handling. The use of a heat seal or other positive seal on the mouth of the bag is also a virtual necessity to prevent sifting, as well as to provide an adequate safeguard against product contamination.

Reclosure is another problem complicating the packaging of dry-milk products. Obviously, most homemakers will not wish to use the complete contents of the package the first time it is opened; unused quantities must be kept free of moisture for later use. On this point, some of the non-fat dry-milk packages advise the user to "close tightly to protect from moisture," while others suggest that once the package has been opened the unused contents should be placed in a tightly covered glass jar or other container which can be effectively sealed. Some producers, in the interest of consumer convenience, divide the contents into two or more sealed inner bags.

Since non-fat dry-milk solids are a relatively inexpensive product, package cost must be weighed carefully and balanced against the degree of protection afforded. It is in the inner bag that the most variation if found among packages from different milk processors. Among the materials which are being used for these bags, or have been tested for possible use, are cellophane, glassine, Pliofilm, polyethylene and various combinations, such as laminations of parchment and saran, kraft and aluminum foil, etc. Another package form which has been used for the non-fat product consists of a composite can with suitable moisture-barrier ply and metal ends, including a friction top.

Borden packages

At present, The Borden Co. is the most active among larger producers in promoting the sale of non-fat dry-milk solids for consumer use. The Borden product, called Starlac, is now virtually in coast-to-coast distribution. It is widely advertised in newspapers and some "spot" television commercials are also being used. Starlac advertising stresses the fact that the contents of the 1-lb. package, when reconstituted by the addition of water, produce five quarts of non-fat milk at a total cost of approximately 39 cents. Other points emphasized in the ads include the fact that Starlac provides all the valuable B vitamins, protein, calcium and other important minerals found in milk and that the package requires no refrigeration, while as much or as little product as required can be used each time and the remainder stored for later use.

The current Starlac package consists of a special type of folding carton with an inner liner which is actually an integral part of the package and is handled on special equipment.** The outer carton is printed in red, yellow and blue, with the Borden name in red across the top of the display panel and product name in yellow against a dark blue background. The familiar Elsie trademark is reproduced in reverse white against a circular red background. On the back panel are directions for use, including correct quantities for equivalent amounts of fluid non-fat milk and utility of the product in liquid or powder form in cooking, preparation of buttermilk, etc. Other side panels carry information on the food value of Starlac and its economy and convenience, along with various recipes. Directions for preparing Starlac "non-fattening whipped topping" are given on the bottom flat and a note on the top of the package advises the user to "Keep package on dry, cool shelf. Open inner bag carefully. Close tightly to protect from moisture."

** Inner-Lined containers and Rotoseal equipment by the Interstate Folding Box Co., Middletown, Ohio.

In the patented type of prelined container used for Starlac, the liner is formed entirely independent of the outer carton, having its own independent liner seam which provides maximum protective characteristics for the product.

Since it is fabricated as one integral unit, the liner squares up automatically as the outer carton is squared up, eliminating the extra time and labor involved in trying to assemble separate bags or the combination of liners and cartons.

With this type of package, the type of liner used is tailored to the particular requirements of the product to be packaged.

Thus, with Starlac, the hygroscopic character of the powder and its tendency to sift through even the finest openings had to be considered. These requirements led to the selection of a lamination of greaseproof parchment and saran for the Starlac liner, with the saran forming the inner surface of the bag.

On the Borden Starlac packaging lines, the prelined cartons are set up and closed on special equipment designed for use with this type of carton.

One unit sets up the carton and makes the bottom closure; then the inner bag is filled and the package passes through a second machine which, in one continuous operation, elongates the liner mouth, folds in the side flaps of the carton, tucks the

THREE TYPES OF CANS are in use. Celesto is an all-metal sealed can containing just enough powder for 1 qt. of skim milk. Wisota is a composite can with sealed end which must be cut off. Milac uses a composite can with friction lid. Fibre can bodies must have good moisture barrier.

top and automatically ejects the package. This unit can make closures at a top rate of one per second.

Hawthorn-Mellody

Hawthorn-Mellody Farms Dairy, Chicago, in recent months has been promoting the sale of its Mello-Lac non-fat dry-milk solids in the Chicago area. Mello-Lac is sold in a 1-lb. consumer package consisting of a folding carton with a sealed inner bag of laminated Diafane. With this combination, the company states, no evidence of moisture penetration has been found in packages up to six months old. The carton, printed in red and green, features the company's daisy symbol on the top flat; this trademark also appears in smaller size on the four side panels. The display face of the package highlights the company and trade name, with the phrase, "non-fat dry milk solids" and a parenthetical line in smaller type (dry skim milk). Across the bottom of the front panel, in reverse white against red, is the statement, "Makes 5 quarts of non-fat milk for drinking, cooking and baking." The back panel gives directions for storage and reconstitution of the powder, while the left panel carries sell copy, including a description of food properties, approximate analysis, vitamin content, etc. On the right side of the box are three recipes, supplemented by additional recipes and product information on a printed folder placed in the top of the package.

This company has also introduced a companion product, chocolate-flavored Mello-Lac, which consists of non-fat dry-milk solids with cocoa and sugar added. When mixed with either hot or cold water, it produces a tasty, nourishing beverage and may also be used in the preparation of various chocolate-flavored foods. The package is similar in construction to that used for the regular Mello-Lac and follows it closely in design, although it is printed in brown and tan to eliminate possible confusion between the two products. Hawthorn points out in its advertising that with this product it is possible to make 5 qts. of tasty, nourishing chocolate drink at a cost of only about 2 cents per glass.

Birmingham producers

Another company merchandising a consumer package of non-fat dry-milk solids is Dairy Products Co., Birmingham, Ala., which sells the product under the Cloverleaf trademark. No information about their package is available from the company, but the packages shown herewith, purchased in a Chicago food store, are folding boxes of glue-sealed construction, printed in red, yellow and green. The milk powder is sealed within two 6-oz. Pliofilm bags which are placed in the carton. Calling attention to the fact that the product is sealed in Pliofilm for protection, the package also cautions the user to store any unused contents in a dry screw-top jar or other airtight container. The inner packets are actually one long Pliofilm bag, heat sealed at each end and also at the middle, so that half of it may be readily separated without destroying the seal on the rest of the product.

A circled cloverleaf is emphasized on the display panel of the package and a narrow green band, encircling the carton at the bottom, provides pleasing contrast with the bright yellow background. A trade character designated as "Cathy Clover" on the back panel provides printed instructions on preparing skim milk and cultured buttermilk with the powder. Users are also invited to write to the company for a free recipe booklet. The two side panels of the package carry further information on the product and its many uses in cooking, baking and drinking. Included on the sealed top flap, in addition to product identity, is an oval pricing patch.

S. T. Jerrell Co., Birmingham, was a pioneer in consumer packaging of non-fat dry-milk solids. S. T. Jerrell, founder of the company, who was operating a small grocery during the depression year of 1931, got the idea of selling this item at retail one day when a customer said she had been buying small quantities from a wholesale supplier for making buttermilk and asked why he didn't stock it for the convenience of his customers. Mr. Jerrell bought a 95-lb. drum of dry-milk powder and, to his surprise, sold half the contents the first day. During the next six weeks, he sold more than 1,000 lbs. of non-fat dry-milk solids in paper bags. As sales increased, he ordered glassine bags and cartons and established the Economy Products Co., selling the product under the name Economy Brand Skim Milk Powder.

Packaging improvements have been made from time to time and at present the Jerrell product is packed in three sizes of consumer cartons—7

WHOLE MILK, including butterfat, is even tougher to package and is less widely distributed. Kraft uses a key-opening lithographed vacuum tin to prevent oxidation. Jerrell's dry skim milk is in a sulphite-glassine duplex bag in a cellophane-wrapped folding carton. Darical brand comes in a 2-lb. sealed cereal type of package with an outer tight wrap and a heavy-duty multiwall inner bag made of kraft-wax-foil construction.

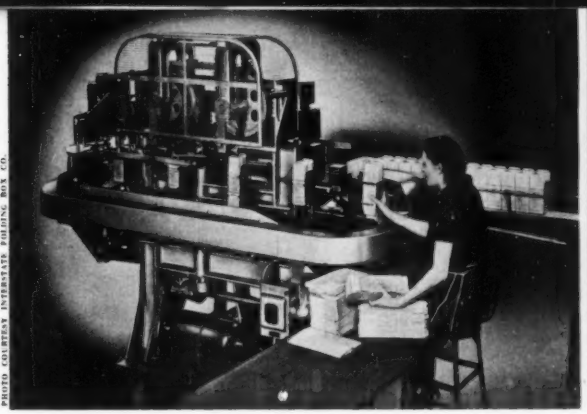


PHOTO COURTESY INTERSTATE FOLDING BOX CO.

SPECIAL MACHINE on which the Borden company's Starlac pre-lined carton is set up. A similar type of unit folds and closes the liner and carton after the product is filled at a rate of 60 a minute.

FILLING STARLAC on special lines. This 1-lb. package of non-fat dry milk solids is currently the biggest-volume consumer item in this field.

oz., 12 oz. and 16 oz. Each package consists of a folding carton printed in red, white, yellow and blue, with an inner bag of duplex construction, consisting of a sulphite-glassine combination. In earlier days, when bags of single construction were used, the outer box was wrapped with cellophane or waxed glassine for additional product protection. However, this outer wrap has now been temporarily eliminated due to the shortage of materials.

The Jerrell name is prominently shown on all panels of the carton, with "Economy Brand" in smaller type. On the front panel, the name "non-fat dry-milk solids" appears in reverse white against a rectangular red background. A solid red band encircles the package at the bottom, providing a background for the company name in white. The back of the package is devoted to directions for reliquefying the product and making cultured buttermilk, while one of the side panels contains further information on making cottage cheese, chocolate milk and using the powder as a dry ingredient in bread, cakes and other foods. An analysis on the remaining side panel lists the percentage of protein, minerals, milk fat and other components of the product.

Triplex package

One of the most interesting consumer packages for non-fat dry-milk solids is that used by Sanna Dairies, Inc., Madison, Wis., for its Sanalac brand. A special convenience feature is the fact that the folding carton contains 10½ oz. of the powder, heat sealed in three cellophane packets. Each inner bag contains exactly the right amount of powder required for making 1 qt. of non-fat fluid milk, eliminating the need for measuring, possible spillage, left-over quantities, etc. The chipboard carton, printed in red, blue and cream, is die cut on one side panel so that the three packages may be seen directly behind an illustration of three 1-qt. bottles of milk. This arrangement dramatically calls attention to the fact that each packet of powder, when reconstituted, is equivalent to a full quart of non-fat milk.

The back panel of the Sanalac package lists recipes for hot chocolate, biscuits and tapioca cream, while the two top flaps contain "sell" copy and directions for making whipped Sanalac. On the right panel are four line-drawing illustrations and simple directions explaining how to snip off one corner of the envelope and pour the contents into a jar or milk bottle for reconstituting. Across the bottom of both side panels are the instructions, "Keep package in a cool, dry place." According to a descriptive folder issued by the company, Sanalac is packaged in the most protective and convenient package available and "will keep fresh and sweet on your shelf for months."

Particularly effective from the standpoint of product protection is the package used by Milk Minerals Co., Chicago, for its Darical brand non-fat milk powder. This 2-lb. package consists of a glue-sealed, tight-wrapped cereal-type carton, used in combination with a heat-sealed inner bag comprised of kraft paper laminated to aluminum foil with microcrystalline wax. After being heat sealed, the mouth of the gusseted bag is folded down within the carton prior to closing and wrapping. The top of the package is cut open or removed entirely when the product is to be used. The user is instructed to store the package in a cool, dry place and to place any powder remaining in the package after first use in a dry jar or can with airtight closure to keep out moisture.

The label for the Darical package is printed in yellow and black on white label stock. Two panels on the display side of the package feature its convenience and economy, and are supplemented by a black panel with drawings of 3 qts. of milk—the amount to be obtained by reconstituting package contents. The back panel is devoted primarily to information about the product and its food value, while the two side panels carry directions for reconstitution and use of the product in either dry or reconstituted form.

Composite and metal cans

It should not be concluded that bag-and-box combinations are the only type of package being used currently for consumer packs of non-fat dry-milk solids. Several producers are successfully using for this purpose composite cans having a suitable moisture barrier in the fibre side wall. One such user is Land O' Lakes Creameries, Inc., Minneapolis, Minn., whose package has metal ends and a friction-type metal lid. Ten-B-Low Co., Columbus, Ohio, whose non-fat dry-milk powder is called Milac, packs 12 oz. of the product in a fibre can with metal bottom and friction cover. One commendable feature of

(*This article continued on page* 166)

Packaging's Hall of Fame

THIRTY-FIRST OF A SERIES

BIRDS EYE

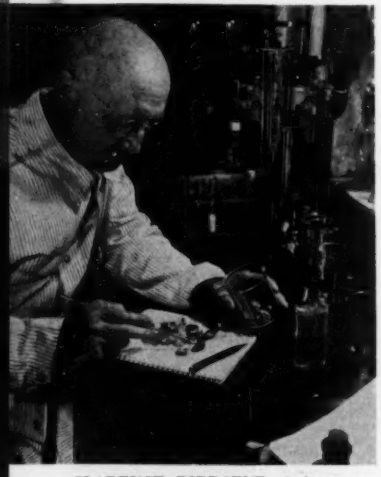
BRAND

FROSTED FOODS

Few packages have such a clear claim to a place in *Packaging's Hall of Fame* as the now familiar Birds Eye Frosted Foods package—the unquestioned pioneer and still the leader of the frozen-foods industry.

In less than a quarter of a century the convenient, protective and economical frozen-foods package—as exemplified by Birds Eye—has revolutionized methods of food preservation, storage and distribution as well as the food preparation and eating habits of a nation.

With its inception in the late 20s, the Birds Eye package and process were the beginning of an entirely new industry, which is reported to have had, in 1950, a total volume of $700,000,000, distributing more than 1,300,000,000 lbs. of quick frozen foods.



CLARENCE BIRDSEYE, father of the Birds Eye brand and of the entire frozen-foods industry, developed his quick-freezing process after analyzing the foods preserved by nature's own quick freezing in sub-zero Labrador.

Birds Eye today tops an industry of 1,043 frozen-food processors who together produce more than 200 varieties of packaged quick-frozen foods under some 1,200 brand names. A further idea of the effect of the Birds Eye development on the economy of the entire food industry is revealed by the following statistics:

Two hundred thousand retail stores equipped today to sell frozen foods—about half of all retail food stores in the country.

An investment of more than $100,000,000 in low-temperature frozen-food cases in these 200,000 stores.

Two million freezer units in American homes, representing an expenditure of approximately $500,000,000.

A hundred and seventy-five million cubic feet of low-temperature freezer space used to store quick-frozen foods, more than double the capacity in 1939.

Twenty-five thousand super-insulated railroad cars to transport frozen foods from source of supply to distributing points, as against 2,000 such cars in 1940.

Approximately 150,000 people directly employed in the processing and distribution of quick-frozen foods—in addition to employment on farms, groves, fisheries and supplying plants.

Birds Eye not only provided the prototype of all frozen-food consumer packages, but it has throughout its history made notable contributions to the improvement of packages, filling and closing machinery, heat-sealing methods and moistureproof overwraps suitable for low-temperature storage.

In the annals of American business initiative, the story of Birds Eye Frosted Foods is an outstanding example.

Clarence Birdseye, a Gloucester scientist, developed the first successful quick-freezing process as a result of his observations while making a biological survey with a fur-trading expedition in Labrador. While engaged in this work, between 1914 and 1917, he noticed that fish and caribou meat after quick freezing in sub-zero Arctic air were still fresh and flavorful when cooked several months later. He knew that ordinary freezing would not preserve such flavor and texture, so he concluded that *rapid* freezing at the low Arctic temperatures was responsible.

On his return home, he began a series of laboratory tests. In 1925 he came up with a quick-freezing system which could be applied commercially. He found that the faster a food could be frozen, the less chance there was of large ice crystals forming and tearing down the cell walls, releasing the natural juices and injuring the texture of the food. He organized the General Seafoods Co. and began to market quick-frozen fish. The going was tough, because the public had a preconceived idea that "frozen" meant "cold storage," which had a connotation of second-rate. But Birdseye kept on trying. He began to quick freeze fruits and vegetables in freezing units of his own devising.

As Birdseye expanded into a general line of frozen foods, the original General Seafoods Corp.—together with Birdseye Laboratories—became a subsidiary of a new company which he

NOMINATED FOR PACKAGING'S HALL OF FAME BECAUSE:

- **Their solution of packaging and marketing problems made possible a $700-million industry that has revolutionized U.S. food practices.**
- **Birds Eye is today—as it always has been—the top seller in a field that has grown to 1,200 brands.**
- **The company's developments in packages and machinery have consistently set the pace for all.**
- **Its promotion built on quality overcame consumer resistance and helped sustain the entire industry in its difficult years.**

1931 **1933** **TODAY**

PACKAGE CHANGES have been few. The early, bulky package was changed by General Foods in 1933 to a flatter, cellophane-lined carton much the same as is used today. Change in 1945 to present label introduced color and appetite appeal.

called General Foods Co. This was the origin of the name of today's General Foods Corp. Birdseye's company was purchased by the Postum Co. in 1929 (for a reported $22,000,000) in one of a series of acquisitions of important food products. The name that Mr. Birdseye had coined for his company —more descriptive of a varied food business—then replaced "Postum" as the parent company name and General Foods Corp. was born.

The purchase of Birdseye's business was probably one of the most venturesome transactions in food history—a large, successful company taking over an unknown with little more to offer than an idea. Many more millions had to be invested before quick-frozen foods caught on.

Package development

Second in importance only to the process itself was the packaging. Before these new foods could be sold at retail, methods had to be found for putting them in convenient, protective, economical consumer units. Birds Eye had to start practically from scratch in 1930; there was no precedent. It was a laboratory task—a search for an ideal frozen-food package, which continues today with as many ideas on the subject as there are packers of frozen foods.

Probably no package development in recent years has involved the efforts of so many package suppliers and packaging technologists seeking to solve the essential commercial chemical and physical problems. Needed was:

1. A package attractive in appearance, low in cost, strong, compact and suitable for high-speed production on automatic equipment.

2. A package that would minimize enzymic and chemical changes by preventing access of outside air, using materials that would not stain and were odorless, tasteless, nontoxic and—in some cases liquid-tight.

3. A package that would prevent product desiccation, requiring packaging materials substantially water-vaporproof at zero temperature.

The man General Foods called in to tackle these problems in 1929 was A. B. Brackett, then a mechancial engineer with United Shoe Machinery Corp. Today, as manager of package research for General Foods' Birds Eye Division, Al Brackett's name is known nationwide as practically synonymous with frozen-food packaging.

One of the first considerations, in addition to low cost and protection, was a package that would definitely distinguish quick-frozen foods from other types of processed foods. Metal

cans would have been (and are today, for certain products) an efficient type of frozen-food container, but at the beginning of this new industry it was discovered that consumers were too apt to regard quick-frozen foods in cans as the same as any other kind of canned foods and store them accordingly—with disaster. If the package was obviously different in form, the consumer could be taught to give it the proper kind of handling.

The Birds Eye method of packaging *before* freezing also had different requirements from later methods of packaging *after* freezing. Because of its comparative availability and low cost, the folding carton appeared from the beginning to have many advantages—but an ordinary carton alone gave little moisture protection. It was necessary to have a moistureproof film to be used as a liner for the carton.

Many films were tested in the beginning, among them cellophane, which in the '30s was just coming into prominence. But moistureproof cellophane at that time was not designed for frozen foods; the film tended to crack at zero temperature. It was largely due to Birds Eye's needs that methods were developed for making a true low-temperature cellophane with an "anchored" coating—what is now known as MAT (moistureproof, anchored, transparent) and, in its heat-sealing form, as MSAT. Since that time films of a number of other materials have become efficient liners for frozen-foods cartons, but cellophane is still the most widely used by the entire industry.

Another problem that faced the pioneers was the need for a liquid-tight package for some products. This was a different question from water-vapor protection, which is insured after the product is frozen by what is known in the industry as an "ice seal" at the folds of the cellophane liner.

Ordinary "dry" fruits and vegetables (those without free-running liquid content) caused no trouble, but such things as fruits in syrup were apt to leak in a very messy way, either before freezing or after defrosting.

Early experimenters then turned to the idea of a liquid-holding bag, instead of a liner, for products in syrup such as peaches, strawberries and other fruits—and thus helped pioneer the heat-sealed bag of moistureproof cellophane, which is now so familiar in many fields.

Birds Eye's next step was the development of a leakproof carton construction, by the use of a one-piece box folded in such a way that none of the syrup could leak out unless it flowed over the top.

In later years Birds Eye became one of the first to recognize the advantages of the completely sealed, liquid-tight, waxed fibre can with metal ends for liquid-content products.

The Birds Eye technicians worked out many of the problems in the labeling, filling and merchandising of the composite container and it has now become virtually standard throughout the industry for fruits in syrup.

Merchandising aspects

In the beginning Birds Eye Division used printed cartons showing the now familiar white bird trademark and the name Birds Eye (taken, of course, from the inventor's name but divided by G.F. into a two-word spelling for purposes of trade-mark registration) on a blue background with all informative data on the carton. It was originally planned to market the products without a wrapper, since the inner liner was expected to give the necessary moisture protection. It was soon discovered, however, that some kind of heat-sealed overwrap was needed to hold the carton flaps tightly and prevent damage to the package in the freezing unit and also later during handling.

For many years Birds Eye Frosted Foods packages appeared with a plain outer wrapper of translucent waxed paper over the printed carton. This type of wrapper partially obscured the brand and product names, and also often become unsightly. The soft wax tended to pick up dirt and ends often came unsealed.

As quick-frozen foods began to catch on—as competitors appeared and self-service selling increased in popularity—it was found that a frozen-foods package, in addition to being protective and neat, had to be colorful, to create appetite appeal and to maintain brand superiority.

During the early '40s the surface design of frozen-foods packages received increasing attention. Suppliers of wraps by then had developed im-

REFRIGERATION was the great marketing problem that Birds Eye solved. Retailer resistance to the expense of low-temperature storage cases was at first formidable; now 200,000 retail stores have sub-zero cases and most of them are of the open, self-service type illustrated above.

proved methods of printing on opaque waxed paper.

As a result, Birds Eye introduced in 1944 the first of its full-color, rotogravure-printed packages, retaining the familiar bird trademark, but accompanying it with appetizing illustrations of the products and an illustration of a farm scene symbolizing freshness and fine flavor.* This full-color, pictorial technique, modified to the requirements of each product packed, is still used for all Birds Eye products. On seafoods, an ocean scene forms the background.

While overwraps of this type were originated primarily for improved decorative effect, it was later found that the outer wrap, efficiently heat sealed, also can be a very effective moisture barrier. Some packers now use this type of outer wrap as the only protective element of the package, doing away with the inner liner.

Another question in the beginning was that of the proper size and shape of the container. The quantity of frozen product consumers preferred to buy approximated the contents of a No. 2 can, providing the average family with four to five servings. The 1931 package measured 3 by 5 by 2 in. and contained 1 lb. of product. Today's standard package, containing 10 or 12 oz. of product, is 4 by 5 in., and considerably thinner. This dimensional change came about for two reasons. It was found that the thickness of the carton was an important factor in speed of freezing. And the flatter, shallower carton provides a broader surface area for display of brand name, illustration and product information.

Many of the original principles of the Birds Eye packages are still basic today, although, of course, the company uses many variations, depending on the products packed, including various shapes and sizes of cartons; the metal-end fibre can for fruits; the conventional all-metal can for orange-juice concentrate (now a big Birds Eye item); various combinations and constructions for frozen fish and poultry, and special larger units for commercial and institutional sales. The company is continually studying new packaging materials and combinations in its constant search for the best possible package.

An example of the accomplishments of such research is the new type of carton on which Birds Eye is now standardizing. To the unpracticed eye it doesn't look much different from the old-type, one-piece, cellophane-lined, cold-water-waxed carton, but its construction permits automatic rather than manual closing.† And the pattern of the improved carton permits a 20% reduction in the amount of paperboard used. As fast as the automatic equipment could be manufactured, Birds Eye has been converting all of its plants to the automatically handled package.

The Birds Eye carton is paraffined on the outside. The 300-MT35 cellophane liner is attached to the blanks at the supplier's factory with speci-

THREE BASIC TYPES of packaging are illustrated by Birds Eye's green peas, orange-juice concentrate (both today's top sellers) and sliced peaches. Development of cellophane-lined, waxed-paper-overwrapped carton was Birds Eye's biggest contribution to packaging. Composite can, now universally used for fruits in syrup, was also pioneered by Birds Eye.

* See "Color for Birds Eye," MODERN PACKAGING, Sept., 1945, p. 98.

† See "Birds Eye Goes Automatic," MODERN PACKAGING, July, 1949, p. 92.

VARIOUS FORMS of the carton package are used today for product varieties such as fish fillets, corn on the cob, cut fowl and French-fried potatoes. Note how label design has been adapted to all.

ally developed adhesives. At the packing plant, the lined carton blank is fed into a forming machine which sets up the carton ready for filling. The automatic closing machine folds the cellophane around the product and locks the cover in place by means of interlocking tabs and slits. The closer, with one attendant, runs at a speed of 120 cartons a minute, requiring the use of two forming machines to supply it. Finally, a waxed-paper overwrap, printed with the Birds Eye four-color pictorial design, is applied and heat sealed.

Marketing problems

It is never easy to introduce and establish a new product, but Birds Eye had obstacles which no other food packer has faced in modern times.

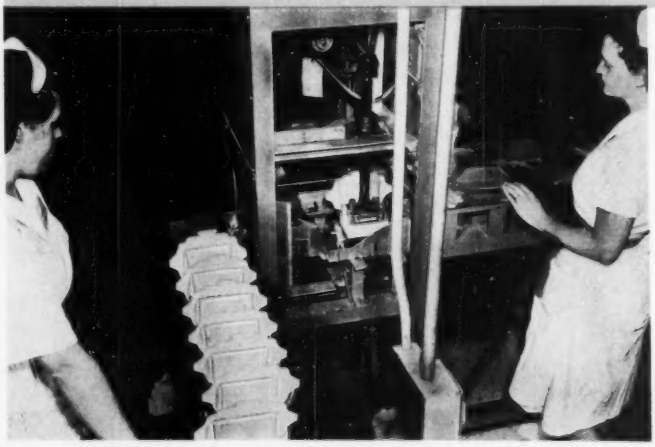
In the first place, frozen foods require costly refrigerated transporatation and storage all the way from the freezing plant to the consumer. There were times when the development of such facilities appeared to be almost an insurmountable task. The first 15 zero-temperature retailers' cases, built in 1930, ranged from $1,000 to $2,000—a large cash outlay for a dealer at any time, but especially so during the years of a depression. It was not until 1934 that engineers developed an effective case which could be bought for approximately $360. Later the practice of renting cases at a nominal fee enabled the full-scale development of a retail distribution system.

Beyond the physical obstacles, there remained the big psychological question: Would the public accept quick-frozen foods? In 1930 some 20 stores were selected in Springfield, Mass., as a test market. The Springfield Experiment, as it was known, became a milestone in frozen-food history, as the Columbus Experiment by A & P was for produce pre-packagers. For two years Birds Eye conducted intensive educational work, backed by dealer aids and local advertising, to acquaint housewives with this new type of food preservation. The effort, though costly, was rewarding. The Springfield public bought frozen foods, told friends about the convenience and flavor, and came back for more.

Further tests were undertaken in Rochester and Washington, D.C., under Howard Lochrie, Birds Eye advertising and sales promotion manager, whose pioneer efforts in frozen-food merchandising parallel those of Al Brackett in package development. Few new grocery products ever have registered such steady year-to-year gains as did Birds Eye frozen foods during the '30s and '40s.

But the products required continu-

Birds Eye's mechanized



CARTONS, complete with their pre-attached cellophane liners, are fed to the machine which sets them up automatically, ready for filling.

ing unusual advertising and merchandising support. The whole frozen-food industry is indebted to General Foods for the capital it risked, against heavy odds during the depression years, when few had been convinced of the soundness of the idea.

Birds Eye has always considered quality to be its strongest promotional and selling point. Through rigid control of processing and packaging it has maintained uniform product quality to a remarkable degree. In the mad scramble of expansion that the frozen-foods industry experienced immediately after World War II, many producers lost sight of this basic factor: they seemed to feel that the public would buy anything that was frozen and they were careless about packaging. The result was a flood of off-quality merchandise, which brought swift consumer reaction; scores of processors went bankrupt. It was a black eye, but the honor of the industry was saved largely because Birds Eye was always there, with dependable quality, to keep housewives in the frozen-foods habit. The marginal producers were shaken out and the survivors quickly brought themselves up to Birds Eye standards of quality control and packaging.

First Birds Eye advertising was in local newspapers in areas where the quick-frozen foods were distributed. The first magazine advertising appeared in *The New Yorker* in 1935. It was not until 1940 that Birds Eye used its first big-scale national advertising in *Life* magazine. Consistently, the company has been an extensive user of weekly magazine space, concentrating in media which could feature seasonal sales activities. This was costly advertising, for in the early years the company estimated that its Birds Eye distribution reached only 70% of the market areas which are covered by the readership of these publications.

Heavy advertising support continues. General Foods will release no figures, but trade talk is that Birds Eye in 1951 will probably spend between $2 and $3 million in all media. According to figures published by the Publishers Information Bureau, the expenditure was $942,000 in 1950 on magazines, magazine sections, network radio and network TV (excluding local), while the newspaper outlay in 1949—the latest year for which media records are available—was $340,000. The company has long been a substantial user of radio and for three years sponsored the Dinah Shore show on a coast-to-coast hook-up.

Today Birds Eye is a big user of spot television and "hitch-hikes," and the "Birds Eye Kids" are fast becoming an advertising classic.

Birds Eye is not only pleased but a little amazed at the way the Birds Eye Kids (one of them shown in our cover illustration) have taken hold. The impish children first appeared on a billboard in Los Angeles in 1948. They attracted so much attention that it was decided to use them for additional outdoor advertising.

Now they are used in every form of Birds Eye advertising and display—including television commercials—and are recognized as among the most effective trade characters ever created. The company is constantly receiving letters commenting on the kids and requesting reprints of them.

Today's operation

From the original experimental plant in Gloucester, Mass., Birds Eye packaging operations have expanded to packing plants maintained in 17 states: New York, Oregon, Maine, Minnesota, Washington, California, Indiana, Maryland, Wyoming, Florida, Idaho, Arkansas, Pennsylvania, Texas, Nebraska, North Carolina and Massachusetts.

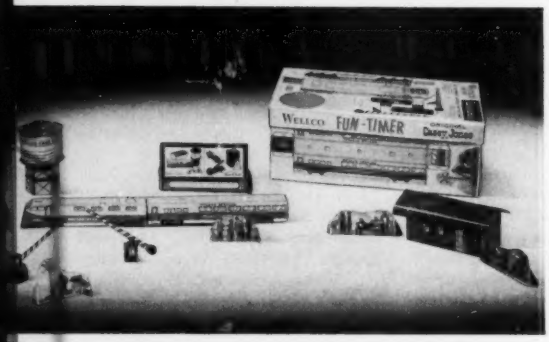
Birds Eye products come from gardens, fields and the sea all around the nation. Within hours—and often only minutes—after they are harvested, they are cleaned, stripped of waste and packaged. Immediately they are subjected to sub-zero temperatures in multiplate quick-freezing cabinets, where metal plates are (*This article continued on page* 170)

carton-packaging operation

CLOSING MACHINE automatically folds the liner and closes and locks the flaps of the carton prior to overwrapping operation.

QUICK FREEZING between closely spaced plates in these huge cabinets is heart of Birds Eye process.

Children's shoe boxes make three-dimension toys



Juvenile package appeal enters the field of children's slippers with the introduction by Wellco Shoe Corp., Waynesville, N. C., of its "Fun-Timer" line. The lithographed shoe boxes feature cut-outs from which boys and girls can make complete three-dimensional, full-color toys. The shoes, for youngsters three to nine years of age, come in three brightly colored designs called "Hot Rod," "Fire Chief" and "Casey Jones." The gaily colored boxes are designed with cut-outs appropriate to each style of shoes and may be constructed so that the wheels on the racing cars, locomotives, trains and fire-department vehicles turn. The line will be distributed to more than 5,000 retail outlets.

CREDIT: *Boxes, Container Corp. of America, Chicago.*

Reversal of appetite-appeal design for frozen-fish package

The Kroger Co.'s recent switch to a non-pictorial three-color reproduction for frozen-fish packages represents a complete departure from the popular present-day trend to four-color pictorial design. This reversal of the appetite-appeal theme—illustrating prepared fish on the packages—is based upon the company's own research which revealed that consumers showed an overwhelming preference for the new non-pictorial design.

Secret movies were taken in Kroger stores of homemakers selecting frozen fish from a display cabinet holding both the old and new packages. The film demonstrated that shoppers were confused by the reproduction of the prepared product on the package—they couldn't tell whether the fish was cooked or fresh. Consequently, the company discarded the old design and adopted an entirely new one that absolutely discards illustrations of prepared fish.

The new design presents a clean appearance with its large white areas combined with dark red. Lettering clearly tells the housewife that the product contained is "Cleaned—trimmed—ready to cook."

CREDIT: *"Tyton" wrapper, Marathon Corp., Menasha, Wis.*

HISTORIES

Carton and book form a combination unit for children

Continued interest of book publishers in packaging is shown by Doubleday & Co.'s combination unit designed for the juvenile market—a packaged loom for wool sculpturing of toy animals and a 70-page book illustrating and describing how to make them. A die-cut band down the center of the back of the paperboard carton holding the loom slips over the front cover of the book. This arrangement keeps the carton and book intact as a unit, facilitates retail display and permits nesting of the units for easy shipment and stacking. The supplier of the carton designed the book jacket and the carton. The design features drawings of animals that can be made with the loom.

CREDIT: *Carton, Container Corp. of America, Chicago.*

Printed wraps for pre-packaged foods—a colorful sales aid

A notable advancement in the pre-packaging field is the use of printed Pliofilm sheet as the wrap to aid in establishing store and brand identity.

One of the first to adopt the printed wrap is Sage's Complete Markets of San Bernardino, Calif., which now uses them instead of the colorless film and hand-applied, weight-and-price stickers that formerly appeared on their pre-packaged meat and cheese.

The printed sheets are cut to size, tailor made to the job. The design allows ample space for weight and price marking, while blending these essentials into an attractive pattern with the store's identifying symbol and brand mark.

The new type of wrap does a colorful sales job in the supermarket of building store prestige and brand memory while stimulating sales. At the same time it offers all the established merchandising and display features of the ordinary self-service sheet wrapper. Another advantage of the printed wrap is that it eliminates the operation of attaching a label or sticker to the package.

CREDITS: *Wrap, Milprint, Inc., Milwaukee, Wis. Pliofilm, The Goodyear Tire & Rubber Co., Akron, Ohio.*

Stand-out labels

CANADA DRY SHEDS A BIT OF DIGNITY TO REACH THE MASS MARKET FOR FLAVORED SODAS; CONSUMERS MAKE THE CHOICE

In the carbonated-beverage business, certain brands and flavors receive heavy advertising and promotional backing, while others are given only nominal support and are expected more or less to sell themselves from store displays and shelves. Frequently, in the latter case, package design either makes the sale or causes the beverage to languish on the shelf.

As a general beverage house, Canada Dry produces a wide variety of flavored beverages in addition to its famous Ginger Ale and Canada Dry Water. Such advertising support as is placed behind these flavors features the assortment as a group, under the slogan "A flavor for every taste." Though carrying the Canada Dry name, the package must compete with numerous other brands at the point of sale.

Soundings of the Canada Dry field organization recently showed a definite sentiment that the flavor labels needed more eye and taste appeal, and greater dominance on grocery-store shelves. This precipitated a re-evaluation of the old label designs in relation to market requirements, leading to the creation of new designs which are currently being introduced, first in the Northeastern area and later in other parts of the country as stocks of the old labels become depleted.

The company felt, first, that consumers of flavors such as cream soda, cherry, grape, root beer, etc., represent a market somewhat different from those who regularly buy ginger ale and soda water. Flavors, usually, appeal to a lower age group and a lower income group. Second, brand loyalties are less highly developed—which means that the manufacturer's name may be less compelling than package appeal when such consumers make their selections. From these standpoints, the old flavor labels, which gave about equal weight to the brand name and the flavor name within the dignified Canada Dry shield, were missing the mark. Something verging on the flashy side, with enough "zing" to stand out in self-service stores, was needed.

THE CHANGE recognizes that brand loyalty plays little part in the selling of flavored sodas and so gives heaviest emphasis to the flavor name, with the brand name raised in prominence on the bottle's neck label.

Three independent designers were asked to submit recommendations on how the line of 28-oz. flavors could be redesigned to (1) increase the eye and taste appeal, (2) increase their shelf dominance and (3) retain, if feasible, a continuity of resemblance to the well-known ginger ale and soda-water labels.

One designer was then chosen, and of his three proposed designs, two were executed in their applications to six different flavors. The two, shown in an accompanying illustration, were consumer tested in an interesting way.

Through Canada Dry's advertising agency, six interviewers, each armed with a twin set of bottles differing only in label design, ap-

proached 300 housewives with this remark:

"You may have either one of these soft drinks absolutely free. Please indicate your choice."

This tactic brought full attention upon the labels, since the bottles of beverages were otherwise alike.

Results of this test were strikingly in favor of the design at the right in the photo, regardless of the fact that lettering treatments differed among the six flavors. Preference for this design ranged from a low of 64% for the cherry version to 94% for the cream soda, and averaged 73%.

In conception, the new design was based upon self-service sales appeal, placing heaviest emphasis upon flavor identity. Flavor names appear in strong bold letters, in reverse against a simple shield printed in an intense color corresponding to the color of the drink itself. Canada Dry identity is subordinated on the main label, but is dominant on the neck label in a shield much enlarged over the old design. The sides of the neck label are utilized to repeat the flavor name—this time subordinate to the brand.

Since the central shield has strong "stopper" characteristics, it is accented by reverberation bands at both sides, repeating the shape and suggesting the foam color of the drink through the use of a lighter shade of the deep shield color. An intermediate though still bright band of color across the bottom carries mandatory copy in an overprint.

This sprightly, bright design is expected to appeal to the large "youngster" market and yet a certain degree of richness is retained through the use of a die-cut neck label. Over-all, the design is appropriate for the nature of the product—a gay, party item.

The colors, changed considerably from those used previously, help to make the package stand out competitively against other beverages on the shelves and also help to provide speedy flavor recognition. Each label is printed in three colors with no screen tints.

The label change applies only to the flavored-soda line; the present labels for Canada Dry Water and Ginger Ale are being retained.

CREDITS: *Design, Robert G. Neubauer, Inc., Bridgeport, Conn. Labels, American Label Co., New York. Bottles, Anchor-Hocking Glass Corp., Lancaster, Ohio; Armstrong Cork Co., Lancaster, Pa., and Owens-Illinois Glass Co., Toledo. Caps, Bond Crown & Cork Co., Div. Continental Can Co., Wilmington, Del.*

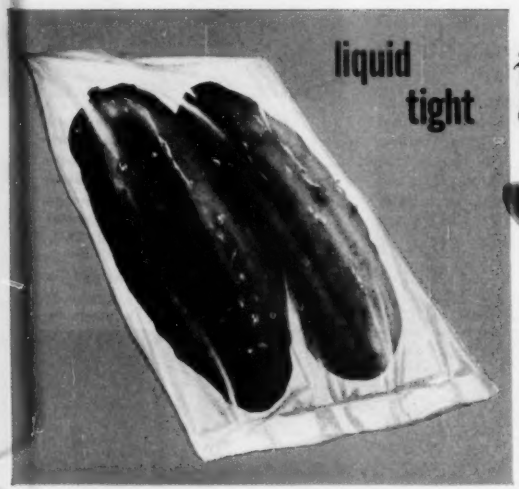
CHOICE between the two proposed designs shown above was left to a jury of 300 consumers. Three out of four, offered either of the bottles free of charge, took the one at right. Preference for this design averaged 73%.

PHOTOS COURTESY J. M. MATHES, INC.

NEW LABELS are applied to entire line of flavored beverages, of which these three are representative. Note the strong family tie despite differences in lettering requirements. In each case the large shield is in strong tone of the color of the beverage; the two "reverberation" outlines are in lighter tone and the bottom band in an intermediate shade of the same color.

Best way to wrap up a

Hard-to-package products look better, keep



PLIOFILM *seals pickles, sauerkraut and oysters in their own brine, without leakage or moisture loss. Lets customer see contents.*

PLIOFILM *holds up to 10 pounds of any bulky fruit or vegetable, without danger of breakage—aids volume selling.*

FOR more than twelve years industry has been solving many of its toughest packaging problems with PLIOFILM—Goodyear's transparent rubber hydrochloride film.

This unique film has many advantages. It is tough and durable, with strength to hold heavy goods. It is hard to tear, split or puncture—won't shatter or run. It seals moisture in—or out—insuring quality protection. It has good dimensional stability—doesn't pucker or shrink. And its sparkling transparency gives your product a "buy me" appeal.

Got a packaging headache? Maybe PLIOFILM's *your* medicine, too. Write: Goodyear, Pliofilm Dept., Akron 16, Ohio.

problem

better in PLIOFILM

puncture-resistant

THE PERFECT WRAP *for roasts, poultry and all irregular products,* PLIOFILM *won't shatter or run. Its clear transparency speeds self-service sales.*

prevents corrosion

PLIOFILM *keeps spark plugs from rusting and corroding by sealing out harmful moisture. If your problem involves keeping moisture in or out, try* PLIOFILM.

insures cleanliness

PLIOFILM *keeps linens and other textiles clean until sold. Doesn't shatter or split in shipment—eliminates rewraps.*

Good things are better in

Pliofilm

3-way protection against air, moisture, liquids

GOODYEAR
PACKAGING
FILM

Pliofilm, a rubber hydrochloride—T. M. The Goodyear Tire & Rubber Company · Akron, Ohio

Ansco's triple threat

BY TAKING FOIL OFF FILM ROLLS AND USING IT TO SEAL HERMETICALLY THREE ROLLS IN A CARTON, IT BOOSTS SALES AS MUCH AS 115%

It's no idle boast when the Ansco division of General Aniline & Film Corp. calls its new multiple-unit package containing three rolls of Ansco All-Weather film a "selling package." The company has impressive sales figures to prove it.

The eye-appealing new three-roll film package, which consists of a brilliantly printed red, white and blue aluminum foil wrapper sealed around a sturdy folding carton that is just slightly larger than a cigarette package, combines features which bring approving nods from both consumers and retailers.

A new use for aluminum foil in this period of scarcity might seem a risky business. But, because the sealed box wrap eliminates the customary foil wrap on each spool of film within the box, it actually requires less foil. The box overwrap is a tissue-foil lamination with wax and uses the same gauge of foil (0.00035 in.) as was previously applied, as plain foil, to each spool of film. Because the area of a single box overwrap is considerably less than the combined area of three spool wraps, the new packaging required, on the average, about 30% less foil. And the new method is further justified by the increased life of the product and elimination of waste.

The elimination of the heretofore standard "expiration" date on the package is an outstanding feature noticed immediately by any photographer who scrutinizes the new package.

The many ramifications of discarding the expiration date—made possible because of the exceptional protection afforded by the sealed foil wrap—are expected to have a profound effect upon the whole film industry, since dating film rolls has been one of the biggest headaches with which the industry has had to deal.

By using a package that protects the life of the emulsion so that it remains fresh "for years," Ansco solves not only one of its own biggest problems, but many of those of its dealers. For instance, Ansco no longer has to pick up "expired" stocks, dealers no longer have prospective customers refuse to buy rolls because the expiration date is near and there is no need to set aside outdated stocks as potential losses.

The same protective feature that permits the expiration date to be abolished also makes it possible for Ansco film to be shipped to nearly all climates without special packaging.

The retailer is, of course, appreciative of the merchandising advantage of the three-roll package, which is believed to be the first multiple-unit package ever used for roll film. His dollar volume on a unit sale is increased. Spot checks on sales of the package made by Ansco show that approximately seven out of 10 customers are purchasing the three-roll pack in preference to a single-roll package. Furthermore, the retailer's photo-finishing business stands to benefit, since the average camera owner is encouraged to "shoot the works" when he knows he has two more rolls at hand.

Economy of the three-roll pack is the big inducement to the consumer. Packages are priced so that the purchaser saves 5 cents a roll, or 15 cents on the three. This price reduction is possible without sacrificing the dealer's regular mark-up.

In designing the three-roll package, Ansco drew upon past experience. During World War II, the need for protecting film in the tropics where humidity could cause rapid deterioration led to the use of special hermetically sealed packages. The idea of using a positive, heat-sealing, water-vapor barrier appealed to the company's packaging experts because of the knowledge gained with these tropic packs and also because Ansco had originally used a heat-sealed cel-

BRILLIANT FOIL gives lustre to red, white, blue colors. Laminated wrap, firmly heat sealed over single carton for three rolls, protects film "for years"; an expiration date is not required.

lophane wrap on bulk packages of 12-film cartons. All of this experience would, the experts felt, provide excellent background for setting up efficient packaging lines to handle the new tri-film pack if suitable material could be found.

After study of various materials, aluminum foil with a heat-sealing lamination of tissue and wax was selected. The laminated foil, in addition to meeting the heat-sealing and moistureproofing requirements, offers brilliant printing. Red and blue transparent inks are used for the solid background color areas and opaque white ink for the lettering and special information spots.

At Ansco's Binghamton, N.Y., plant where the three-roll packages are produced, the printed foil is received in 425-yd. rolls. The present packaging line utilizes semi-automatic cartoning, wrapping and sealing equipment and is capable of handling production as high as 28,000 packages per day. A high-speed, fully automatic line will be set up as soon as conditions permit.

After the paperboard carton has been formed, filled and sealed, a specially designed, semi-automatic wrapping machine cuts the foil to the proper size as it is fed from the roll, and folds and tucks the edges around the two sides and top so that the foil overlaps properly to hug tight and flat as the package moves through the heat-sealing section of the machine.

There is a further economy of packaging materials in that the single carton for three rolls requires considerably less board than the three individual cartons previously used.

The tri-pack required approximately 53% less newsboard for the cartons and 22% less cellophane for bundling, according to the company, and the savings in these materials, company engineers say, will more than offset the dollar cost of purchasing fully automatic equipment to package the new three-roll unit.

A series of tests have been made on the package which indicates that the film will be adequately protected in a variety of climates, but company officials warn that there are extreme climatic conditions where even this package with its hermetic seal will not protect the film indefinitely. Nevertheless, they are sufficiently confident of protection to state in sell copy on the back of the package that the sealed pack will insure film freshness "for years" and to make the unqualified warranty: "Each roll guaranteed—pictures that satisfy or a new roll free from Ansco."

The three-roll pack is available for the three most popular sizes of snapshot film—120, 620 and 127. When it was first test marketed last summer in Washington, D.C., it was merely placed in a small assortment of film packages in a rough container on counters of chain and independent drug stores and retail photographic shops. Without any further promotion 65% more rolls were sold of the 127 size in this package than were sold in single rolls of Ansco and all other brands of film combined; in the 120 size, 64% more rolls were sold and in the 620 size a whopping big 115% more rolls were sold.

Purchasers of the three-roll pack during this test were handed postcards as they paid for the packages, on which they were asked to write their reaction to the idea. When the comments on these returned cards were analyzed by subject, the comments relating to the attractiveness of the package surpassed even the mention of the price saving.

With such favorable consumer reaction, Ansco started planning for national distribution this summer with a full-scale promotional campaign that includes special display material and the heaviest advertising schedule in the company's history, using *Life, Look, Collier's, Saturday Evening Post, Holiday, Quick* and other magazines.

CREDITS: *Laminated foil (Reyseal 502), Reynolds Metals Co., Louisville, Ky. Wrapping machine, Scandia Mfg. Co., North Arlington, N. J.*

ECONOMICAL in the use of materials, the new pack does not require any additional foil (since the individual wrapping of rolls is eliminated) and much less boxboard is required for packaging the three single cartons.

WIRE-RACK DISPLAY for retailers shows heavy emphasis on pick-up sales, promoted by 15-cent saving on the multiple pack.

PACKAGING PAGEANT

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1 The growing importance of modern design in foreign markets is indicated by this group of new packages for "Leche de Salvado" skin lotion, product of Bertini Laboratories in Mexico—a design assignment resulting from a *Modern Packaging* readers' service inquiry. Bottles are private molds. Packaging, other than labels, is produced in Mexico. Design, Charles Cruze, Los Angeles. Labels, Ever Ready Label Corp., Belleville, N. J.

2 Adolph's Meat Tenderizer, marketed by Adolph's Food Products, Los Angeles, is sealed with a metal screw cap and an inner seal that permits the sprinkling of the powder while providing an effective reclosure. Screw cap and "Siftaseal" inner seal, Ferdinand Gutmann & Co., Brooklyn. Bottles, Owens-Illinois Glass Co., Toledo, Ohio. Labels, H. S. Crocker Co., Inc., San Bruno, Calif.

3 Arresting appeal and product protection are offered by Goodman Bros.' "Service Package," a type of boxed assortment of sweets that is becoming increasingly important once again. The two-piece infold paperboard box has an acetate window. Colors are red, white and blue. Box, The Warner Bros. Co., Bridgeport, Conn.

4 Deb Air-Refreshment becomes an appealing gift item in this decorative package containing a set of three polyethylene squeeze bottles of the product in three fragrances—spice, pine and bouquet. The air-fresh theme is carried out in the gay, floral design of the set-up paperboard box. Polyethylene bottles, Plax Corp., Hartford, Conn. Box, Huschle Bros., Inc., Long Island City, N. Y. Cover paper, Yorkshire Press, Inc., New York.

5 Full-color, taste-tempting photographs of serving suggestions feature Swift & Co.'s new 2-lb. Brookfield Pasteurized Process Cheese Food package, designed to increase impulse purchases. Package, Cornell Wood Products Co., Hummel & Downing Div., Milwaukee, Wis.

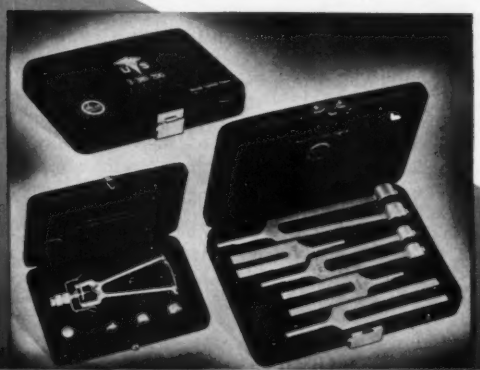
6 Larger unit purchases, rising sales and packaging economy are the result of the new glassine-wrapped multiple candy-bar pack marketed by H. B. Reese Co., Hershey, Pa. Six individual glassine-wrapped bars are placed in a paperboard tray. The glassine overwrap is heat sealed. Package, Milprint, Inc., Milwaukee, Wis.

7 Arthur Murray's entrance in the fashion field is marked by these "Fashions to Dance In" panties, packaged six in a transparent acetate package re-usable as a knitting bag. An attached tag entitles the purchaser to a free introductory lesson at any Arthur Murray dance studio. Package, Acetate Box Co., Brooklyn, using Eastman Kodak Co.'s Kodapak. Silk screening, Larstan Processing Co., Brooklyn.

8 Three kinds of soil that were sold almost exclusively to larger nurserymen are now available to the home gardener in heat-sealed printed polyethelene bags used by Clinton Nurseries, Clinton, Conn. The tough, moisture-proof qualities of the film enable the maintenance of proper moisture content. "Shellene" polyethylene bags, Shellmar Products Corp., Mt. Vernon, Ohio.

9 Glamour products are not the only ones that need glamour packaging, according to Doughboy Industries, Inc., New Richmond, Wis., which report large increases in sales since the introduction of these gay, three-color, overall printed multiwall kraft bags for packaging animal feeds. Bags, Union Bag & Paper Corp., New York.

10 The U. S. Army Medical Corps is now using these sturdy metal boxes to hold various types of tuning forks and tonometers made by the Sklar Mfg. Co. The boxes are covered with leatherette, gold stamped with the Medical Corps insignia, the Sklar trademark and the product name. Base of the box is velvet lined, while the cover is lined with satin. Boxes, Arrow Mfg. Co., West New York, N. J.



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10

VPI goes to war

VAPOR-PHASE INHIBITOR, A POSTWAR DEVELOPMENT, PROMISES TO REVOLUTIONIZE ANTI-CORROSION PACKAGING IN THE NEW ARMAMENTS PROGRAM

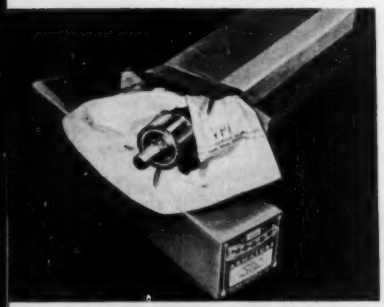
Military packaging, so far as Ordnance items are concerned, is primarily a problem of corrosion prevention. And in this phase of packaging there is today an effective new method—unknown as recently as the close of the last war—which promises to facilitate the shipment of arms and speed their entry into battle.

Vapor-phase-inhibitive papers—commonly known as VPI papers—represent a new concept of the prevention of corrosion of metals. Since their development and introduction in 1948*, the vapor-phase inhibitors have proved their usefulness in commercial packaging of metal products. Now they are taking on important military duties.

A vapor-phase inhibitor is exactly what its name implies: a chemical compound (usually dicyclohexylamine nitrite) which, in its vapor phase, inhibits, or prevents, the corrosive action of oxygen on metal which otherwise would occur in the presence of moisture. The chemical known as VPI vaporizes extremely slowly and steadily over a long period; a minute amount of it dispersed in a coating on paper or paperboard will give corrosion protection to an article sealed in such a package for many months. So potent is the vapor that only about 1 gm. is sufficient to saturate 16,000 cu. ft. of air.

* See "Vapor-Phase Inhibitors," MODERN PACKAGING, Dec. 3, 1948, p. 147.

PHOTO COURTESY ANGIER CORP.



COMMERCIAL USE of VPI paper for simplified protection against corrosion has expanded greatly since 1948. This package for an armature is a typical example.

Previous methods of corrosion-preventive packaging have sought to exclude either oxygen or moisture from contact with the metal product in the package, so that the corrosion action cannot take place. This has required relatively expensive and cumbersome packaging, involving either the application of oil and heavy grease coatings to the metal, with an overwrap of a greaseproof water-vapor-barrier material, or the Method II type of dehydrated package in which powerful moisture-absorbing materials are sealed with the product in water-vaporproof containers.

The VPI vapor, on the other hand, simply arrests the chemical action of corrosion and does not require the complete exclusion of either oxygen or moisture from the metal to be protected.

Pioneer users of VPI report the method is not only effective in preventing rust, but it also produces economies of major importance in manpower and materials, since lengthy greasing and degreasing operations are avoided and, in some instances, less costly exterior packaging can be used. MIL-P-3420 Specification for Packaging Material, Corrosion Inhibiting, Volatile Type, has just been given formal Government approval. Extensive field tests being conducted for all branches of the services indicate that the VPI method will be greatly in demand for metal products packaged for military use overseas.

The storage and handling problems to be faced as tomorrow's international events change into history cannot possibly be predicted, but they must be anticipated. It seems certain that operations on a global front, should they materialize, will be more rigorous than in World War II. Hundreds of handlings will be involved; shipments will have to be transferred from one theatre to another. The temperature extremes will be enormous—ranging possibly from minus 65 to plus 160 deg. F. Long-term outdoor storage would certainly be involved and would most certainly vary all the way from dry desert sands to steaming jungles.

"The use of volatile corrosion inhibitors for the preservation of Ordnance items for several years has been the subject of an aggressive investigation," says Maj. Gilbert Foster of the Office of the Chief of Ordnance of the Army, in a report in the Sept.–Oct., 1950, issue of *Ordnance*.

"At a recent meeting, representatives of these (Ordnance) divisions, the Munitions Board, the Navy and Springfield Armory carefully reviewed data on a three-year testing program conducted by both military and commercial facilities. As a result of this review it was recommended by the group that dicyclohexylamine nitrite or its equivalent be instituted as a packaging medium, essentially for ferrous metals."

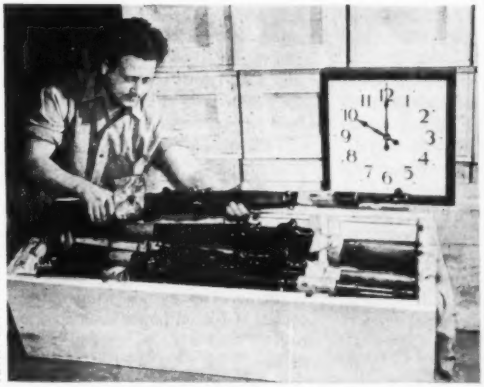
One of the most recent military packaging tests concerns the present and the proposed method of packaging U.S. rifles (Cal. 30, M1). It serves admirably to illustrate the advantages of the VPI method.

The proposed vapor method of preserving and packing rifles employs individual laminated corrosion-inhibitor bags lined with VPI-coated kraft paper.

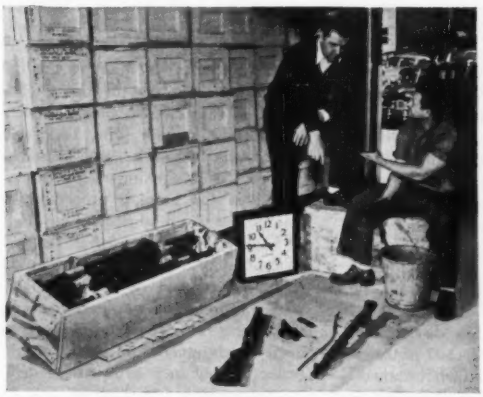
The current method uses a heavy coating of grease on each rifle. Wooden shipping cases are used in both instances. In the proposed application, an oil dip is still employed and only the greasing has been eliminated. In many industrial uses, however, VPI does away with the need

The clock tells the story

OLD METHOD–GREASE



Box opened up, the rifles are ready for unpacking.



Disassembling, cleaning with solvent, rag and brush.

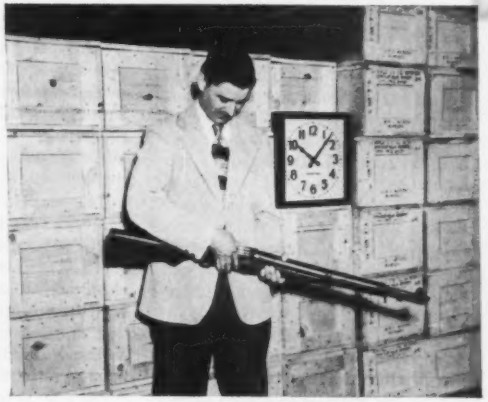
A rifle cleaned, re-assembled. Time: 2 hrs. 45 min.

PHOTOS THIS PAGE COURTESY ARMY ORDNANCE.

NEW METHOD–VPI

Box opened up, the rifles are ready for unpacking.

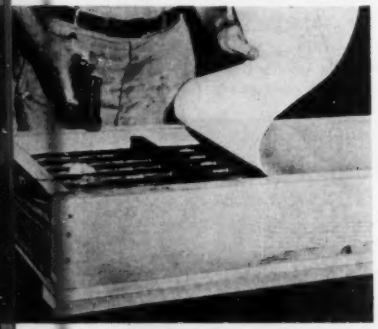
Removed from VPI bag, no disassembly, oil wiped off.



A rifle wiped and ready for firing: Time: 7 min.

ODD-SHAPED PARTS require no special treatment. They are simply wrapped in VPI-treated paper twisted closely about the part.

PHOTOS THIS PAGE COURTESY ANGIER CORP.



BOX LINER of VPI paper is sufficient to protect precision-ground textile-machine roll. Vapor given off by paper is enough to prevent rust without grease coating or other treatment. It saves 1 hr. of cleaning per box.

for slushing or oiling of any kind.

When a case of grease-coated rifles is unpacked following shipment, one man must spend two hours and 45 minutes disassembling, degreasing and re-assembling each rifle. Solvents, rags and a brush, plus plenty of scrubbing are required. At best, the job is messy and tedious—but at foreign destinations and under combat conditions, both time and cleaning materials would be at a premium. Use of solvents involves fire hazards and there is risk of damaging the rifle in cleaning off the heavy grease.

The VPI-packed rifles need only be wiped clean of oil with a cloth on arrival. One man can unpack a rifle and do this job, the Ordnance Corps has found, in from 3 to 7 minutes.

The saving in time is thus more than 26 manhours on every case of rifles packed in VPI. Translated in terms of vast quantities shipped, the savings on only this one item would be of mammoth proportions, amounting to approximately 2,616,666 manhours on every 1,000,000 rifles shipped.

Maj. Foster in his *Ordnance* report gives the following information from reports to Springfield Armory on an overseas shipment of M1 rifle barrels:

"The barrels had been treated with a light coat of oil and then wrapped in VPI 290 coated paper. Upon arrival, 50% of the barrels were inspected and found to be in excellent condition. The remaining 50% were stored and examined at a later date. Comments from the final report follow:

" 'The barrels were found to be in perfect condition. All unblued surfaces are still bright with a thin film of preservative adhering to them and the blued or Parkerized surfaces have the same appearance as a newly processed part. These barrels could be assembled to a receiver merely by wiping the breech-end threads.'

"After complete coordination and on the basis of this and other similar Ordnance tests, Springfield Armory made the first large-scale Ordnance application of volatile corrosion-inhibitor packaging. The M3 caliber 0.50 aircraft machine gun and components of the M1 rifle rear sight are now being protected with these materials. On the machine gun a direct saving of approximately $2 in packaging costs and a 5-lb. reduction in shipping weight has been effected per weapon."

According to Maj. Foster, Frankford Arsenal has been preserving watch parts with these inhibitors for over a year. Rock Island Arsenal has several research programs under way and Letterkenny Ordnance Depot is conducting a volatile corrosion-inhibitor test on automotive-engine storage.

VPI has had increasing use in the industrial shipment of ferrous metal products since it was first introduced in 1948. It has been found a safe, clean method and is said to have prevented corrosion over long periods. If desired, the protective vapor of the chemical can be kept active up to 10 years. Protection, however, is maintained only as long as VPI is present. When a metal article is removed from the package, protection then ceases.

Several methods of VPI packaging are possible and the fact must be stressed that proper use of these methods is essential to prevent the escape of the inhibitor; otherwise long-term protection cannot be assured. VPI, itself, has low volatility and use of a low-cost barrier packaging material will keep the vapor in the package so effectively that a perfectly airtight seal is not required.

VPI wrap is offered in a variety of paper weights and the stock can be flat or creped. The common basis weights are 30 and 60 lbs. Various types of barrier wraps, which reduce the escape of the inhibitor and prolong the period of protection, are available. The barrier wraps usually consist of coated paper laminated and backed with other paper, foil or plastic film.

Articles wrapped in VPI paper can be packaged in a box or a carton. A pre-formed loose liner of VPI paper may be used, or the VPI liner may be laminated to the interior surface of the carton, thus eliminating the operation of wrapping or lining. The paper is supplied in rolls or sheets, also in custom-made forms to fit particular needs. It is also used as a liner for storage bins or for tote boxes.

One of the simplest procedures is the use of a prefabricated envelope or bag, such as was used in the test packaging of M1 rifles. The flap of the envelope can be held in place with a simple fold, staples, adhesives, etc. Some pre-formed envelopes can even be designed for re-use in protecting a tool such as a saw or drill.

The Arabian American Oil Co., in preparing bolts, nuts and hardware for a grueling 11,500-mile shipment to Saudi Arabia, protects these parts from rusting by placing them in plastic bottles, with VPI paper enclosed in each container†. These shipments undergo climatic extremes and storage conditions as severe as possible.

The Whitin Machine Works, manufacturer of textile machine parts, uses VPI paper to line boxed shipments of steel rolls. The result is a 60% saving in packaging time—and that is only a portion of the economy involved. The former method required 15 minutes to slush each box of metal machine rolls with grease. Lining the box with VPI paper takes only six minutes. The big saving, however, is

† See "Mass-Scale Exports," MODERN PACKAGING, Nov., 1950, p. 114.

cleaning time that is required—one full hour per box.

A manufacturer of high-grade steel coils is reported to have reduced spiral-wrap requirements, eliminated slushing and increased hourly output from 1,500 lbs. of steel coils to 3,500 lbs. by adopting VPI paper as an anti-corrosion wrap.

The Foster Machine Co., producer of textile winders, replaced custom-built boxes with lighter, more economical prebuilt boxes. Sheets of VPI coated paper are secured over the highly intricate units after they are installed in the packing case. Effective corrosion protection reduced the need for heavy, custom-built packaging.

Manufacturers of wire and wire products are saving time and packaging materials by using VPI wraps. One producer is using a peripheral strip of VPI creped paper that is fed under the spiral, outer wrapping on coils of wire. Full protection is achieved even though complete coverage of the wire is not obtained with the strip of VPI paper. The steel wire is ordinarily highly susceptible to corrosion. The VPI-wrapped coils showed no rusting even when exposed to snow and rain and temperature changes during a six-week period of outside storage.

Another producer lines fibre drums for wire coils with creped VPI paper. Coils are stacked in the drum, with VPI-paper separators between the coils.

The drum liner is then folded across the top of the coils and the lid is placed on the drum. This method of packing has the advantage of permitting inspection of the coils without requiring that they be unwrapped.

No machinery or special equipment is needed to apply VPI wraps.

The method is especially adaptable to intricate-shaped articles because the vapor permeates to all parts of the packaged product. No film or residue is deposited on metal surfaces; precision-made instruments are ready for use when unwrapped. Of major importance, however, is the fact that VPI stands up performance-wise in the most severe climatic tests experienced in export shipment.

VPI is not a panacea for all corrosion problems. Laboratory tests conducted under severe conditions indicate that direct contact of VPI chemical (not the vapor) with certain non-ferrous metals may actually promote corrosion. Such metals include cadmium plate, Monel, copper and copper alloys, lead, antimony and tin. Since the vapor does not have this corrosive action, many parts with non-ferrous components are being successfully protected with VPI by proper design of the package. As for non-metallic components, materials that release acid may adversely affect the VPI vapor activity.

VPI paper is harmless to handle and safe to store. When correctly used in its proper field, VPI can give packagers a terrific advantage in the fight against corrosion.

The pioneering efforts that have been made thus far are already beginning to pay off for many users.

CREDITS: *VPI-coated papers for applications described supplied by Angier Corp., Framingham, Mass., under patents of Shell Development Co., Emeryville, Calif. VPI raw material (dicyclohexylamine) supplied by Monsanto Chemical Co., St. Louis, Mo.*

Press-open pouring carton for detergent

A surprisingly simple pouring opening—designed as an integral part of the package—is an innovation recently introduced by Oakite Products Co., New York, in the familiar red-and-white consumer-sized cartons of its Oakite detergent.

From the packager's standpoint, it provides a convenience feature for the consumer without adding to package costs. It is achieved through the addition of crease and perforation lines to the carton blanks. An inverted Y score line in the center of the side panel extends from the top edge down approximately 1¾ in. before the arms of the Y branch out to the sides of the panel. The top flap of the side panel is perforated along the edge where it folds in at the top and another perforation line runs through the center of the main top flaps about half of its length. These scores serve to make the corner of the carton flex and break under pressure to form a small triangular-shaped opening, the side panel being distorted at the top into a spout shape. Oakite has applied for a patent on construction details.

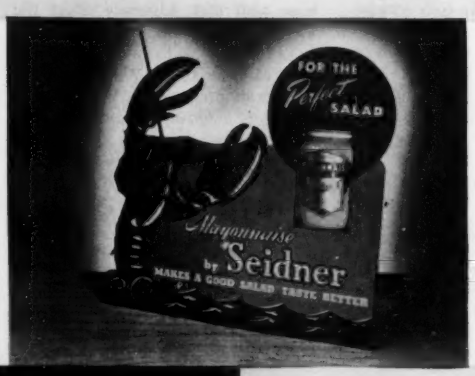
Directions for this new opening are presented on the carton three different ways: by an attention-getting color square printed on the carton top which has arrows pointing to the small "press here" dots, more arrows in the border printed at the top of the side panel and an illustration of the carton on the side just below the crease lines showing just how it should be held to make the opening.

Oakite put the cartons through a five-month testing period during which they were shipped over the country to determine whether there would be accidental opening either while they were in the shipping cartons or when the cartons were handled in stocking at retail stores. Less than ⅜ of 1% showed any damage, the company reports.

CREDIT: *Cartons, Downingtown Paper Box Co., Downingtown, Pa.*

INVERTED Y score line makes corner of the carton flex and break under pressure to form a triangular-shaped opening which serves as a convenient pour spout.

An atmosphere of the circus, with drawings of tents and clowns, dominates this three-color printed and varnished display carton for "Tasty" tooth paste for children, product of the Tasty Tooth Paste Corp., Mt. Vernon, N. Y. Individual tube cartons are different colors to distinguish the two flavors: pink background for the Bubble Gum flavor and red background for the Strawberry flavor. Promoted as "Tasty—the Kid's own—Tooth Paste," the packaging is aimed at the juvenile market. Display and individual cartons, National Folding Box Co., Inc., New Haven, Conn.



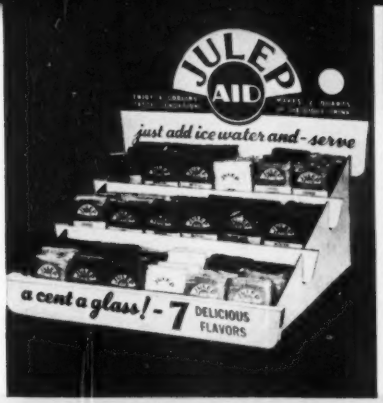
Mayonnaise by Seidner, marketed by Otto Seidner, Inc., Westerly, R. I., is being promoted by this new four-color lithographed paperboard easel display that assumes a three-dimensional effect by the insertion of an actual jar of the product in the die-cut opening at the right. The colored feelers for the lobster at the left are attention getters. The display is suitable either for windows or on counters of grocery stores. Lithography, Halladay, Inc., Providence, R. I.

DISPLAY

In this motion display for Sergeant's Dog Care Products, the plaintive pup "scratches" unceasingly above a collection of Skip-Bath, Skin Balm, Skip-Tick Powder, Skip-Flea Soap and Skip-Flea Powder. The unit is operated by an inexpensive flashlight battery. The full-color lithographed display measures only 14 by 6 in. when set up. Display, Einson-Freeman Co., Inc., Long Island City, N. Y.

In introducing its new Signature toiletries for men, Max Factor Hollywood provides this display case for exhibiting the five items in the line at retail outlets. The outer shell is of a composition material bent into an inverted U-shape; shelves, dividers and back are of the same material. Base is of pressed sawdust, while the bubble front and display sign are of polystyrene. Display, L. Ronney & Sons Furniture Mfg. Co., Los Angeles, using Masonite Tempered Presdwood supplied by Pacific Board Fabricators, Inc., Los Angeles, and polystyrene parts supplied by Peerless Plastics, Culver City, Calif.

Park & Tilford Distillers Corp.'s three-dimensional store-window display creates a striking centerpiece to help liquor dealers promote sales of Park & Tilford Reserve. Simulating a swank home bar, the paperboard display is lithographed in eight colors and has provision for flashing illumination of the back. The tray set-up, which is also lithographed in full color, is a separate piece that fits into the bar top. The unit measures 36 by 42 in. Display, Wesco Associates, Inc., New York.



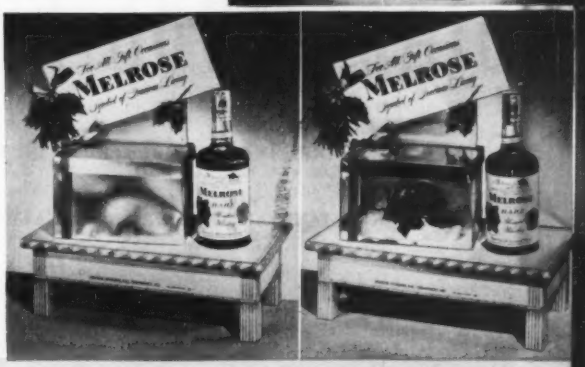
All seven flavors of Julep Aid, a powdered product for making flavored drinks, manufactured by The Julep Co., Sycamore, Ill., are displayed in this compact counter unit measuring only 17 in. wide by 15½ in. deep and 15½ in. high. Six dozen of the packets are effectively displayed on three different levels. The unit knocks down and ships flat. Display, Display Div., River Raisin Paper Co., Monroe, Mich.

Stephan's dandruff-remover hair lotion is being promoted with this full-color lithographed counter unit designed to introduce and stimulate impulse sales in beauty shops, as well as barber shops, where it is already sold. Its double-wing arrangement makes the product visible when approached from the left, right or center. Display, Consolidated Lithographing Corp., Brooklyn.

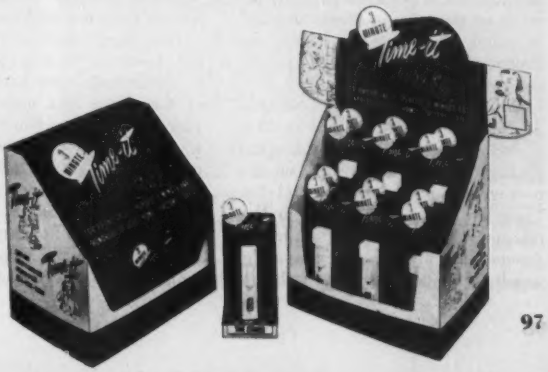
Noma Electric Corp.'s new full-color, illuminated merchandiser is designed to centralize the sale of Christmas lights in one area of a store—on the floor or counter, or in windows. All packaged bulbs at the top of the display are illuminated. The Santa bulb in the center, as well as the decorative bulbs on each side, are also illuminated. Packaged bulbs are stacked around the base of the unit. Display, McCandlish Lithograph Corp., Philadelphia.

GALLERY

A box of translucent, metallic acetate plastic that acts as a one-way mirror until a light flashes in the box to reveal a life-sized rose inside provides an unusual point-of-purchase promotion for the Melrose Co., Cedarhurst, Md. The table and card are of paperboard and an actual bottle of Melrose whiskey fits into a depression in the table top. Display made by Wesco Associates, Inc., New York, using metallic acetate supplied by Coating Products, New York.



A display carton used to introduce the Time-It Corp.'s new plastic 3-Minute Timer carries out the strong, high-impact coloring of the individual platformed cards holding the product—black, white, magenta and yellow. The design treatment is aimed to draw the shopper's attention and stimulate impulse buying. Spot illustrations on the display show the product in use. Design, Gerald Stahl, New York. Display cartons and individual card packages, Acme Folding Box Co., New York.



PHOTOS COURTESY INDUSTRIAL TAPE CORP.

BUNDLING is made easy by application of pressure-sensitive tape strengthened with glass fibres. The Humko Co. ships cartons of vegetable shortening in units of three, held together by only a single band of 200-lb.-test tape.

PRE-BANDING of the carton walls with glass-fibre tape prevents the carton from bulging. This bulging, which previously had been a problem, endangered shipments made by the Curran-Pfeiff Corp. of its heavy ceramic parts.

GIANT JOBS FOR TAPES

NEW REINFORCED MATERIALS FILL IN FOR SCARCE METAL STRAPPING

AND FIND MANY ADDITIONAL APPLICATIONS OF THEIR OWN SPECIAL PROPERTIES

Recent technological improvements in reinforced flexible tapes are resulting in a trend to wider use of this versatile packaging material. The development is particularly timely because of the current severe shortage of metal strapping, for which the strong new tapes can frequently substitute.

Under Order M-49 the National Production Authority has, since May 1, forbidden the use in commercial packaging of metal strapping on any package weighing less than 90 lbs. There are several exceptions to this rule, on a basis of essentiality, but in general the object is to reserve the supply of metal strapping for heavy military shipments. The Steel Strapping Industry Advisory Committee has itself advised the substitution of flexible strapping and adhesives wherever possible to conserve steel for the more essential uses.

Reinforced flexible tapes should not, however, be regarded primarily as a substitute. They have advantages of their own that make them well suited for extensive applications where other types of fastenings are not practical. Beyond the present emergency, they seem likely to carve a place for themselves in extending the use of firm fastening for larger unit loads and safer shipment.

In general, reinforced tapes appear to cost as much as, or more than, metal strapping on a cost-per-linear-foot basis. However, some operations require fewer feet of material to do the job.

Reinforced tapes can be used, in general, for the sealing, reinforcing, banding, protecting, holding and identifying of cartons, boxes, bundles or other unit loads. The principal reinforcement fibres are rayon or glass filaments, and the base materials are usually acetate or vinyl film or kraft paper.

The types of reinforced tape that are most widely used are pressure-sensitive, or self-adhering, when applied directly from the roll. One manufac-

turer has recently introduced a rayon-fibre-reinforced kraft tape coated with animal glue; this tape is applied from a dispenser. Certain of the acetate films are offered in colors or with imprinting and the kraft tapes, of course, lend themselves readily to printing, where identification or advertising is desired.

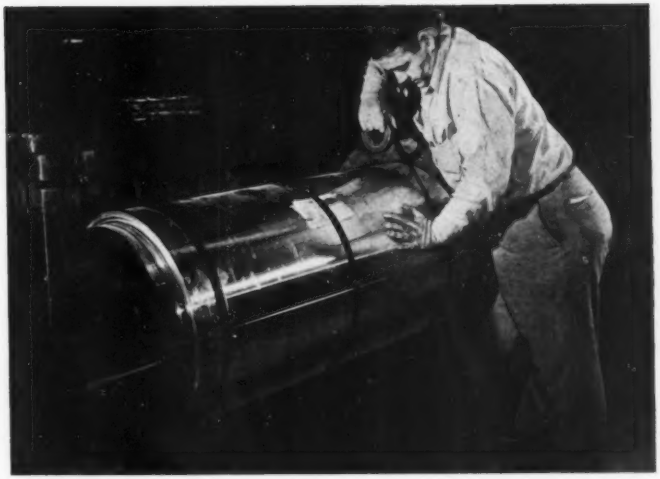
The chief advantages of reinforced tapes derive from their ease of application, their great tensile strength and their shock-absorbing properties. The various types of tapes are designed to meet many diffierent packaging requirements and are available in tensile strengths generally ranging from 75 lbs. per inch of width up to 500 lbs. The 180- to 200-lb.-test tape appears to be the type in greatest demand. The strongest tape is said to handle bundles weighing up to 800 lbs.

Reinforced tapes, in common with steel strapping, offer the following advantages:

1. Permit use of less costly containers. In various instances, wooden boxes and cartons of lighter-weight material can be used, or cartons may replace wooden boxes, etc.

2. Prevent damage caused by rough handling and reduce risk of pilferage or concealed losses.

3. Permit unitizing of shipments, or securing of pallet loads for easier, safer handling. To get better l.c.l. freight rates on cartons, the unitizing of shipments on pallets is increasing steadily. When an adhering tape is used for this purpose it may be slit and left on the carton when the pallet is unloaded.



HEAVY ROLLS of sheet aluminum are secured, scratch free, with bands of rayon-reinforced tape. Pressure-sensitive adhesion simplifies operation.

Reinforced tapes also offer to the industrial user numerous other benefits and advantages:

1. They are economical of materials—take full advantage of carton strength and in many instances need be applied only to areas of excessive stress. Once applied, they stay in place.

2. Avoid damage to cartons or products from crushing or cutting.

3. Eliminate risks of injury to packers or unpackers.

4. Are easily and quickly applied.

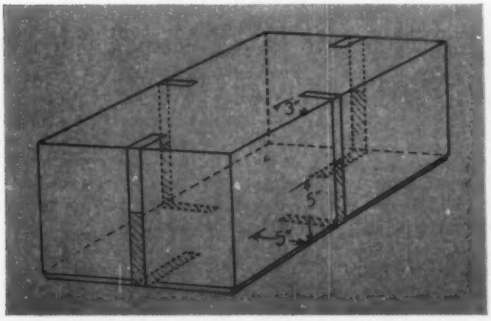
5. Offer no disposal problem.

6. Can be used to repair cartons for re-use.

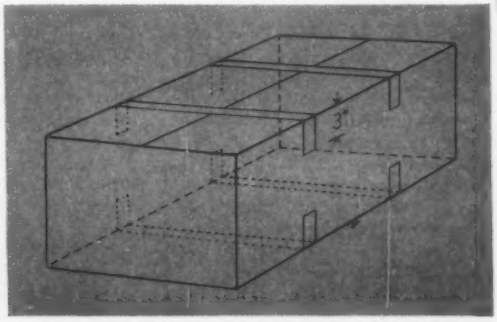
Several brands of tape are available in color to permit coding for identification. One manufacturer is offering a luminescent tape for use on packages that must be seen in a blackout or identified in the dark.

Filament-reinforced tapes meet various packaging requirements in accordance with the specific properties built into them. Advantages of glass fibres, which offer the highest tensile, include light weight, dimensional stability, resistance to breakdown from heat and cold, non-absorption of mois-

PHOTOS THIS PAGE COURTESY MINNESOTA MINING & MFG. CO.



ECONOMICAL use of tape for sealing and reinforcing. Diagonally hatched lines show the lengths of rayon-fibre tape that would be used at four bottom points to close a telescoping container. Open center lines indicate the tape's use on solid fibre boxes to reinforce the score lines.



SLOTTED CARTON can be effectively sealed by running two strips of the rayon-fibre tape across the top and the bottom and then tabbing them with 3-in. lengths on the sides. A continuous band of tape around the carton is not needed here to afford the carton the required protection.

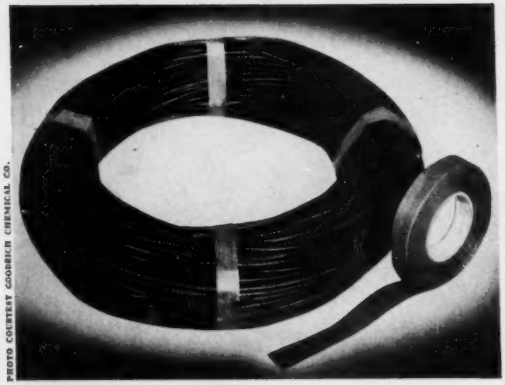


PHOTO COURTESY GOODRICH CHEMICAL CO.

REPLACING metal strapping, glass-fibre-reinforced tape holds this heavy coil of wire for shipment.

PHOTO COURTESY MID-STATES GUMMED PAPER CO.

SHORT LENGTHS of rayon-reinforced gummed kraft tape are sufficient to seal cartons of metal furniture, at a cost saving of $4 to $5 per 100 units.

ture and rot resistance. Rayon filament shares many of these characteristics, producing tapes that are strong and flexible, with excellent capacity to absorb shock.

There is no hard and fast rule to govern selection of one type of tape as against another. This problem is best answered by the individual user in terms of his specific packaging. The element of cost is also important.

Glass-fibre tapes

Packagers who have recently turned to the use of glass-fibre-reinforced tapes report that their great unyielding strength and ease of application are the chief advantages.

The Curran-Pfeiff Corp., makers of heavy (45 to 75 lb.) ceramic parts shipped in cartons, found that cartons bulged and hampered safe stacking. Previous fastenings to prevent bulging could not be drawn sufficiently tight without cutting the cartons and frequently breaking some of the contents.

The company now bands cartons with pressure-sensitive reinforced tape before the cartons are filled. After packing, the carton surfaces remain flat without bulging. Stacking is facilitated; dangers of breaking during delivery are reduced.

Another firm, the Humko Co., vegetable-shortening producer, uses glass-fibre-reinforced tape to secure single cartons in units of three and thus prevent cartons from shifting and tumbling about in box cars while in transit. To facilitate unloading, Humko's cartons are stowed only in the ends of box cars, leaving an open middle area for easy removal. Cumbersome wooden bulkheads are eliminated. Cutting and crushing of cartons, experienced with former strapping, is avoided.

The tape used in the two examples cited above has a tensile strength of approximately 200 lbs. per inch of width. Strength is built in by sealing fine spun-glass threads to tough kraft-paper backing with stain-resistant coating.

An even stronger glass-fibred tape is available for heavy-duty shipments. The Schlosser Paper Corp. frequently ships small quantities (up to 100 lbs.) of printing paper. The paper must reach users free of wrinkles, crimps or dog ears. To hold shipments flat and protect edges, shipments are sandwiched between two wooden frames.

When metal strapping was easier to obtain, the company strapped the entire shipment with two lengths per side of ⅝-in. steel strapping criss-crossed at the center of each frame. Now, using a 500-lb.-per-in. tape (transparent acetate backing, glass-filament reinforced), it is no longer necessary to encircle the package. Instead, three 10-in. lengths of the tape are adhered to outer edges of the four frame sides. This method requires approximately 10 ft. of the tape. The former method required about 21 ft. of steel strapping. The firm reports that the flexible-tape method is easy to apply and economical. It makes possible a neat, flat package.

The Schlosser Co. is also using the reinforced acetate tape for corrugated cartons taking loads up to 120 lbs. Previously, conventional gummed tape was applied to all carton edges to seal them. This was often supplemented with rope. Now using eight pieces of the reinforced tape along carton edges and interlocking the strips at corners, the company finds it can make up a durable package in considerably shorter time per unit.

Rayon-reinforced tapes

Rayon-filament tapes gain their unusual qualities of strength and resiliency from the thousands of long, continuous threads of high-strength rayon fibre that run lengthwise of the tape and reinforce the backing.

Of the many packaging uses for filament tape, one of the most common is in the closing and reinforcing of fibreboard containers.

At J. E. Haseltine & Co., a switch to ½-in., 180-lb.-test rayon-filament tape produced a cash saving of 26% and cut the banding time by 66%.

The savings—based on a labor cost of $0.0252 per minute—were recorded during a recent time-and-cost study made in the firm's packaging department. For the study, equal

8-ft. lengths of tape and the previous banding material were used on identical fibreboard cartons.

The firm's methods engineer found that it required 1⅛ minutes to band the carton with ½-in.-width conventional strapping. Material cost was $0.05086 and the total labor-and-material cost was $0.08866 per carton.

Using ½-in. rayon-filament tape, application time was cut to ⅛ minute per carton. Material cost was $0.05296 and the total labor-and-material cost $0.06556 per carton.

On daily shipments of 300 to 500 cartons, the firm gains a daily average saving of $9.24 through the use of rayon-reinforced tape. In addition, the methods engineer found that by using strips of tape, instead of complete bands, a further reduction in tape consumption to the extent of 15% was possible.

Special study of the sealing problem revealed:

1. Regular slotted containers could be sealed by running two strips of tape across the carton's top and bottom surfaces and tabbing them 3 in. down on the sides.

2. Telescope-type boxes, made of corrugated board, could be closed with four 10-in. strips, each strip running 5 in. up the sides and 5 in. across the bottom of the box.

3. Solid fibre containers could be sealed with four strips extending up the vertical wall and 3 in. beyond the top score line to provide reinforcement for the score line.

4. Full-flap slotted containers could be closed with six 10-in. strips over the top and bottom edges.

5. Overlap-flap slotted containers could be sealed with four 10-in. strips and two slightly longer strips.

Among the wide variety of other uses for the rayon-filament tapes are these:

Fasco Industries, Inc., uses 1-in. widths of the tape to close and reinforce paperboard containers for export shipment. The company uses a single strip of the pressure-sensitive tape around the entire container and reports the immediate adhesive grip gives a tight, tamperproof seal for storage and transit.

Another firm, Manhattan Rubber Division of Raybestos Manhattan, Inc., employs the ½-in. width to seal and reinforce cartons containing rubber products during transit. Four strands of the tape are used on 18- and 25-in. shipping cartons, which average 250 to 300 lbs. when loaded.

A silverware manufacturer in Newburyport, Mass., replaced rope fastenings with filament tape for closing shipping cartons. Use of the tape with automatic taping equipment now makes it possible for one man to do the work four men were previously required to handle.

Similar tape has proved a labor saver as well as an effective holding agent for a steel conduit manufacturer. The firm manufactures EMT (thin wall) steel conduit, which is shipped in bundles of ten 10-ft. lengths weighing 80 lbs. per bundle. Two strips of the filament tape are placed about 12 in. from each end of the bundle to bind it together securely during shipment.

The Childers Mfg. Co. now holds rolls of sheet aluminum weighing up to 200 lbs. with three wrap-around strips of rayon-filament tape. Use of the tape has cut the previous banding time in half. Besides holding the rolls securely, the tape does not dent or scratch the soft metal surface of the sheeting.

Reinforced gummed tapes

A recently introduced type of rayon-reinforced kraft tape is coated with a high-strength pure animal glue.

Its construction is fibre reinforcement laminated between two sheets of kraft. The color of the tape is gray to distinguish it from conventional gummed tape. Tensile strength is approximately 180 lbs. per inch of width. The tape is water activated

PHOTO COURTESY A. J. GERRARD & CO.

PALLETIZING of bulk materials is accomplished with this tough 275-lb.-test fibre strapping, which is used in place of metal bands and similarly applied.

PRINTING can be added to the reinforced tapes to carry either a cautionary or an advertising message.

PHOTO COURTESY TOPFLIGHT TAPE CO.

and is fed from a dispenser—several well-known makes of dispensers are said to be satisfactory. The Hettrick Co., metal-furniture manufacturers using this tape, report savings of $4 to $5 per 100 units packaged as compared with previous methods. Products cartoned include children's play pools and hammock stands. Weights of packed cartons average 10 to 35 lbs.

An advantage claimed for this tape is balanced adhesion; the tape strengthens the package by becoming part of it.

This kind of tape, like the pressure-sensitive types previously mentioned, finds application in many types of packaging—for closing Belsinger boxes (for nails, etc.), gear cartons, cartons for heavy mouldings and fibreboard containers for radiator cores. The tape is used for banding cable reels, eliminating padding and effecting labor savings which have been reported up to 90% in one instance.

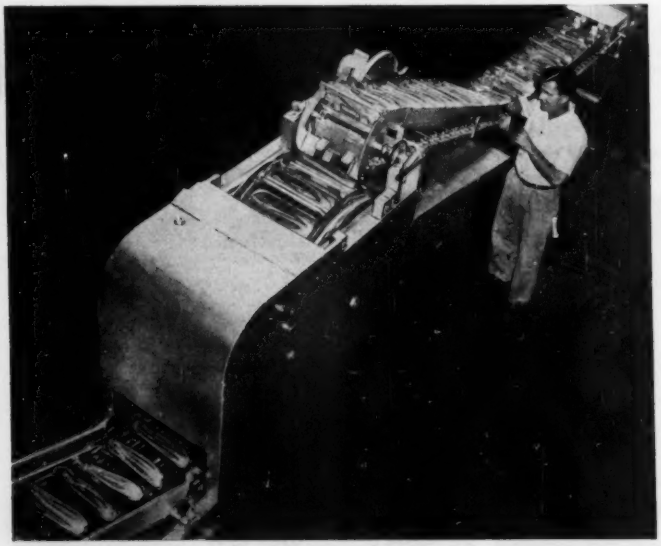
The glue-coated tape, of course, does not adhere to metal, but is overlapped on itself for adhesion. The tape is used for bundling sheet material that requires special care—wallboard, paper, etc. It can be used for unitizing tires, tubing and similar products. It also has applications in the specialty packaging field—as hinges for toy cartons, reinforcement for carry-home cartons and reinforcement for merchandising displays.

CREDITS: *Permacel-15 (Fiberglas-reinforced tape), Industrial Tape Corp., New Brunswick, N. J. "Scotch" brand filament tape No. 890 (Fiberglas reinforced) and "Scotch" brand filament tape No. 880 (rayon reinforced), Minnesota Mining & Mfg. Co., St. Paul, Minn. "Break-Pruf" and "Break-Resista" (Fiberglas-reinforced) tapes, Technical Tape Corp., New York, using Geon polyvinyl material by Goodrich Chemical Co., Cleveland. Fiberglas filaments, Textile Products Div., Owens-Corning Fiberglas Corp., New York. "Tape-Strap" (animal-glue coated tape), Mid-States Gummed Paper Co., Chicago, Printed tapes, Topflight Tape Co., York, Pa. Luminescent packaging tape, Century Coating Co., Whitestone, Long Island, N. Y., using Geon paste resin manufactured by B. F. Goodrich Chemical Co. as a coating.*

Automatic stretch wrapping of celery stalks

The trim, tight, tidy appearance of the Sunniland brand pre-packaged fresh celery stalks is the achievement of stretch wrapping done automatically by a special rotary wrapping machine now in operation at the Sanford, Fla., plant of Chase & Co., fresh fruit and vegetable growers and shippers.

Designed for volume operations, the new wrapper also has the advantage of economy from a packaging-material standpoint. The celery is wrapped in Pliofilm which is stretched 400% during the wrapping operation, it is reported, so that the machine actually wraps 200 large bunches of celery per pound of film. The machine has a maximum capacity of 75 packages per minute, the speed being varied to suit the producer's needs.



REVOLVING DRUM holds film by vacuum while stalks drop in place. Folding and sealing operation is concealed by hood cover (left foreground.)

After washing, trimming and precooling, each stalk of celery is placed on a conveyor feeding into the wrapping machine. In the machine is a large revolving drum over which the film is stretched as it feeds from the roll.

The outside of the drum consists of a series of recessed pockets just large enough to hold one stalk. The Pliofilm is held firmly against the drum and in these pockets by means of vacuum. As the stalks of celery fall gently from the in-feed conveyor into the pockets a series of metal fingers extend to draw the Pliofilm over the pocket and enclose the celery. The final folding arms have heating units with which to seal the package before the drum has revolved far enough to drop the celery onto the outgoing conveyor where it is transferred for crating.

CREDITS: *Wrapping machine designed and built by Hosack Engineering & Developing Organization, Sanford, Fla. Pliofilm, The Goodyear Tire & Rubber Co., Akron, Ohio.*

BURT makes cartons by the millions — you'll be proud of yours

F. N. Burt Company Inc. • Manufacturers of Small Set-up Boxes, Folding Cartons and Transparent Containers • 500-540 Seneca Street, Buffalo 4, New York • Offices in Principal Cities Or Write Direct • Canadian Division: Dominion Paper Box Co. Ltd., 469-483 King St. W., Toronto, Canada

The PREFERRED Frozen Food Wrapper IS THE MODEL FF

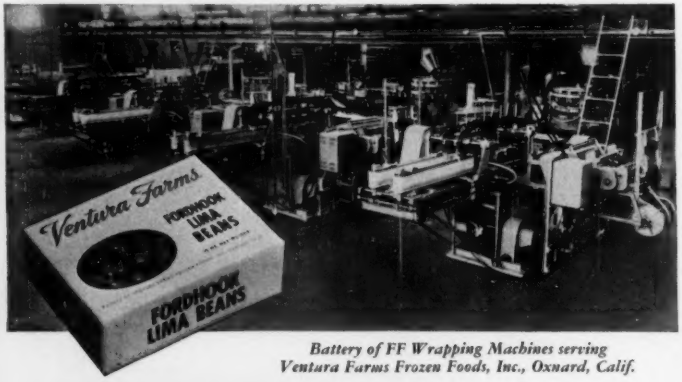
Few machines have ever met with such enthusiastic approval as the Model FF Frozen Food Wrapper. It's today's fastest selling machine in the frozen food field.

Performance records in plant after plant offer convincing proof that the FF is tops in fast, dependable production. At a speed of over 100 packages per minute, it turns out uniformly perfect wraps on trays, cartons or metal-end fibre cans. Uses any type of plain or printed material suitable for frozen foods, and automatically makes allowance for variations in size due to freezing. A superior type of end-fold mechanism assures accurate location of printed matter on *ends* of the package.

The wide size range of the FF permits the wrapping of an entire line of frozen foods, and size changes are made by quick hand-wheel adjustments . . . A marvel of ease and simplicity in cleaning and oiling . . . Features the most advanced transport mechanism, with automatic provision for preventing jams and damaged cartons . . . Built virtually as a single, compact unit, the FF is easy to transport from plant to plant, if desired.

GET ALL THE FACTS

If you are seeking *proven* dependability, plus the most modern machine design, get all the facts on the FF.



Battery of FF Wrapping Machines serving Ventura Farms Frozen Foods, Inc., Oxnard, Calif.

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Sterilizing with electrons

NEW CATHODE-RAY TECHNIQUE PERMITS LOW-TEMPERATURE STERILIZATION OF FOODS AND DRUGS ON CONVEYOR LINE AFTER PACKAGING.

By J. G. Trump* and B. E. Proctor†

Sterilization can now be achieved as the final step of manufacture by belt-conveying the packaged product through a stream of high-energy electrons. This fundamentally new process appears to be particularly suitable for many types of heat-sensitive materials, including pharmaceuticals and foods.

The attractiveness of high-energy electrons lies in their ability to sterilize materials throughout their volume virtually without heat. The most resistant organism in high concentration can be completely destroyed by an electron dose which raises the temperature of an aqueous solution less than 10 deg. F. High-energy electrons are equally effective on dry products, which can, in fact, be sterilized more economically because of their lighter weight. With limitation only as to thickness, the electrons can penetrate through any type of package material including glass, metal, foil and plastics.

Electrons are the tiny negatively charged elementary particles that swarm about the nuclei of atoms much as the planets move about the sun. The outer electrons—along with the positive nuclear charge—account for the chemical properties of the 92 elements and for their ability to form into the countless molecular combinations ranging from simple water to extremely complex protein structures.

Electrons for sterilization are readily released by heating a tungsten filament to several thousand degrees C. When electrons from such a source in vacuum are acted upon by a high electric field between two metal electrodes, they are accelerated away from the negative or cathode electrode and acquire the energy in volts which produced this field. Such swiftly moving streams of negative particles were termed "cathode rays" by the 19th century physicists who first studied their properties.

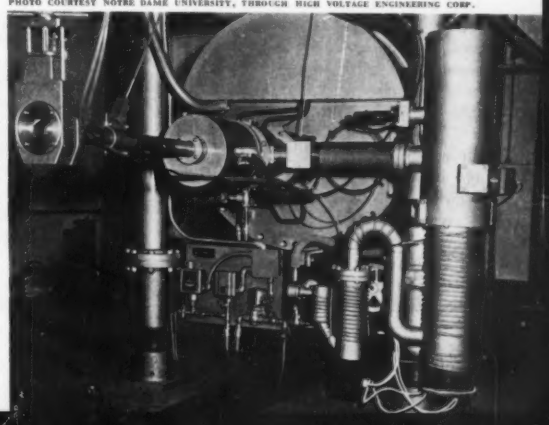
Electrostatic accelerator

In the investigations at M.I.T., electrons are accelerated to energies of two, three and four million volts by means of a Van de Graaff electrostatic generator. All of the high-voltage apparatus, including the tube, is contained in a grounded steel tank about 4½ ft. in diameter containing compressed gas as the voltage insulating medium. The electrons emerge from the highly evacuated tube into the air through a thin aluminum window. This continuous stream of high-energy-charged particles may be directed at a conveyor belt loaded with the product to be treated.

In addition to scientific studies on the specific effects of these cathode rays on micro-organisms, this work has demonstrated the possibility of sterilizing—without adverse effects—such diverse products as pencillin, surgical sutures, dressings, anti-coagulants and wheat.

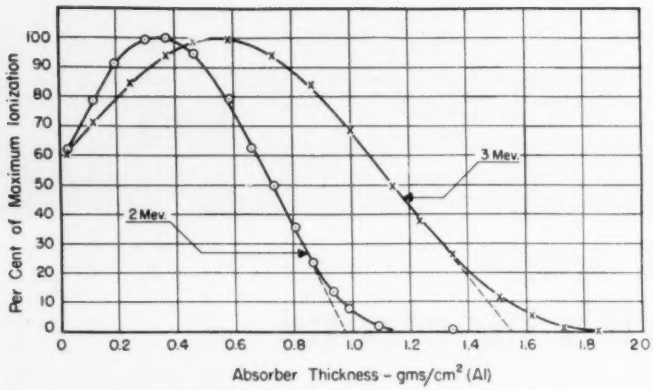
The penetration of high-energy

PHOTO COURTESY NOTRE DAME UNIVERSITY, THROUGH HIGH VOLTAGE ENGINEERING CORP.



1. UNIT for two-million-volt electron sterilization in a medium-volume application. Cathode-ray sources are now commercially available; this unit will handle 40 gross lbs. of product per hour; larger ones will sterilize up to 2,400 lbs.

* Department of Electrical Engineering and †Department of Food Technology, Massachusetts Institute of Technology, Cambridge, Mass.



2. DISTRIBUTION of ionization below surface of materials irradiated by mono-energetic electrons of two-million and three-million volts.

electrons depends on both the electron voltage and the density of the irradiated material. Two-million-volt electrons have a maximum range in water of one centimeter and an effective range about two-thirds of this value. Since the range increases directly with voltage, three-million-volt electrons will adequately treat to a depth of ⅝ in. in water or similar materials and to somewhat more than ⅝ in. if the products are solid and can be irradiated from opposite sides.

The distribution of sterilizing energy in depth is shown in Fig. 2 for two-million- and three-million-volt electrons. It is evident that many packaged materials, because of their low density compared to water, can be irradiated to proportionately greater depths; a uniform package with a density of 0.5 gr. per cubic centimeter can be effectively treated to twice the thickness indicated above. Still other materials require sterilization only inside the package and in the surface layers of its contents. Thus, certain drugs in pill form, sliced cheese or bacon can receive an electron dose of sufficient penetration by an electron source of 200 to 500 kilovolts energy.

When adequate penetration through selection of the electron voltage is assured, it is essential that an adequate electron dose is delivered to secure the desired effect. The dose is determined by the number of bombarding electrons—a quantity which can be determined and controlled with precision. The selected dose level may vary from less than 100,000 reps[1] to destroy the weevil and its larvae and eggs in wheat or the mold in cheese to the two-million reps required to insure the complete destruction of a high concentration of assorted resistant spore-forming bacteria. There exists, however, no form of life, whether bacteria, virus, spore or mold, that cannot be completely destroyed by a relatively small amount of this form of ionizing energy.

Packaging phases

For a sterilization process to be carried out on a package and its contents, the package should be capable of being hermetically sealed and of a composition and structure that will not permit the entrance of microorganisms thereafter. The most common examples of this type are the conventional metal cans and glass jars, provided they come within the limitations of penetration of the electrons. Containers of aluminum or combination metal and fibre may also be used. When glass is the container, a darkening of the glass takes place unless a special type of glass is used.

Because little heat is produced, one may assume that metal containers such as the ordinary sanitary can would not require the same heavy-gauge metal now used—thus bringing about economies in strategic metals as well as permitting a greater penetration of the cathode rays into the contents.

[1] A rep (Roentgen equivalent physical) is that amount of ionizing energy which will result in the absorption of 83 ergs per gram of air.

The many types of plastic materials that may be extruded in tubular form and are capable of thermoplastic sealing may also be used, providing they are impermeable to microorganisms and sufficiently strong to prevent rupture.

Effects of cathode rays

What are the adverse effects of high-energy cathode rays? For products of relatively simple molecular structure such as the antibiotics, adrenal extracts, cellulose and plastic materials, there appear to be none. No reduction in potency or increase in toxicity of penicillin has been observed from more than five times the sterilizing dose. Moreover, with such simple molecular structures it can be calculated that the sterilizing dose of electrons should produce a completely undetectable change in the material.

For products of intermediate molecular complexity—such as the prothrombin or fibrinogen components of blood plasma, or the protein molecules of many foods, changes can be brought about by electron irradiation in large doses. Fortunately, even here it has been found that the effects other than sterilization can often be made undetectable or tolerable. This may sometimes be accomplished most effectively by irradiating the material while it is at low temperature.

The biological action of high-energy electrons is completely different from that of heat; it depends on the excitation and ionization of the atoms of the organism, which in turn cause chemical changes which bring about its demise. Although a lowering of the temperature does not greatly alter the lethal dose for a complex life-bearing entity as a bacterium, it appears to reduce the effect on the medium itself by factors of hundreds and thousands.

Production units

Cathode-ray sources for product sterilization have reached the stage of commercial availability. The High Voltage Engineering Corp. of Cambridge, Mass., is manufacturing Van de Graaff electron sterilizers in a range of sizes. The smallest unit (see Fig. 1), which is also recommended for biological research with this new sterilizing agent, operates at two-million volts and will easily sterilize with (*This article continued on page* 164)

Precipitation coating

A NEW METHOD OF DEPOSITING A CONTINUOUS FILM ON THE SURFACE OF PAPER STOCK FOR GREASEPROOF PACKAGING.

By D. Robert Erickson*

A new method of coating paper and board to give it either greaseproof or grease-resistance properties is based on the principle of precipitating a resistant film much like cellophane directly onto the paper or board rawstock. This operation can be accomplished either on an "off the machine" coater or directly on the machine as the board or paper is being made.

With a laminating process, to produce such a sheet, a cellophane close to 0.001-in. caliper would have to be used, along with adhesives to bond it to the paper. With the precipitation method of making the film on the sheet, complete greaseproofness has been obtained with films as low as 0.00015-in. caliper or approximately 1 lb. per 1,000 sq. ft.

The film consists of hydroxyethyl cellulose. It is precipitated from a water vehicle, so that no organic solvents or vapors are encountered.

This method differs from all other methods of coating in that, immediately after a normal coating operation and before any appreciable penetration into the sheet takes place, the applied liquid coating is contacted with a salt solution and is immediately transformed to a nontacky solid that overlies the rawstock in the form of a flexible protective film.

The film is non-thermoplastic and is inherently flexible. It may be colored with a large variety of dyes and pigments. It may also be filled with large amounts of clay or other coating pigments, although in this case greaseproofness is lost and degree of grease resistance becomes a relationship of binder to filler. Some results are shown in Table I.

The unpigmented coatings are very resistant barriers to the transmission of gases such as oxygen and CO_2, and are quite impenetrable to most odors. The film is completely water insoluble, but is not a water-vaporproof barrier and will swell in contact with water in the same manner as PT cellophane.

It can, of course, be coated with small amounts of water-vaporproof materials in the same manner as moistureproof cellophane. The solvents carrying these materials cannot penetrate into the film, so a very thin continuous coating can be formed on the surface.

The HEC (hydroxyethyl cellulose) film will resist all normal aging effects (except dehydration) as will the solutions from which the film is precipitated. Neither the film nor the solutions will support bacterial growth.

Because of these attributes, board and paper coated with these films should prove of interest and value to the packaging and specialty-paper fields. Low-cost greaseproof and oilproof paper plates, trays and dishes should open up a large new field for sales. A large saving in the cost of manufacture of bakery cartons by the elimination of laminating is of economic interest. Complete greaseproofing rather than grease resistance and the elimination of wax lamination failure from the packaging of hot bakery goods is a product advantage.

Small amounts of pigment in the film do not deleteriously effect its greaseproof properties and in many

* Erickson Research Laboratories, Kalamazoo, Mich.

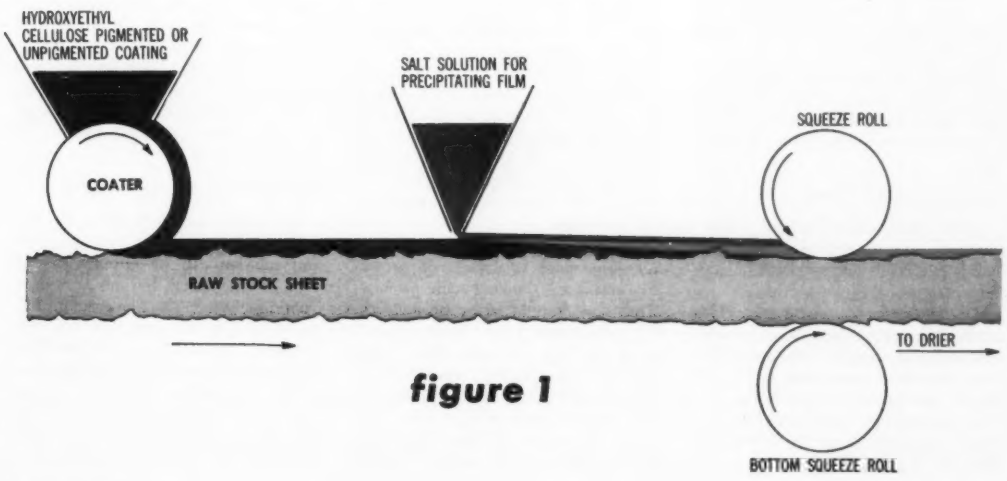
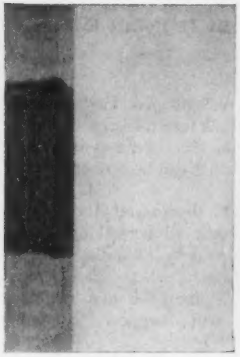


figure 1

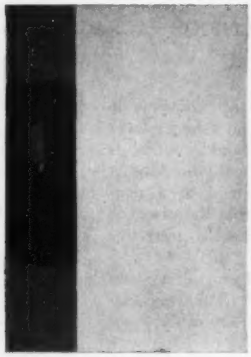
Test results with various coating formulations on board stocks

Corn oil was applied and drawn across coated and uncoated portions of each sample to show staining effect of oil and to show a comparative resistance to penetration and transparentizing effect of superimposed lacquers or overprint varnishes.



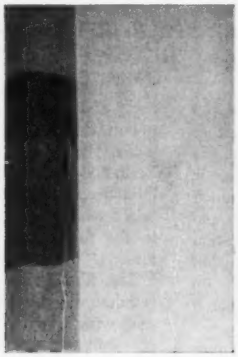
Raw stock: **Manila board**
Coating:
33% HEC
67% Satintone clay (Edgar Bros.)

Brightness: **(Photovolt)**	
Raw stock	**60.0**
Coated	**77.0**
Coated (oil)	**70.5**
Raw stock (oil)	**39.0**



Raw stock: **Newsback board**
Coating:
33% HEC
67% Satintone clay

Brightness: **(Photovolt)**	
Raw stock	**33.0**
Coated	**71.0**
Coated (oil)	**65.0**
Raw stock (oil)	**11.5**



Raw stock: **Manila board**
Coating:
50% HEC
50% Ti O_2 (Rayox 510)

Brightness: **(Photovolt)**	
Raw stock	**51.5**
Coated	**74.0**
Coated (oil)	**68.0**
Raw stock (oil)	**32.0**

Raw stock: **Newsback board**
Coating:
33% HEC
67% Ti O_2 (Rayox 510)

Brightness: **(Photovolt)**	
Raw stock	**30.0**
Coated	**82.0**
Coated (oil)	**77.0**
Raw stock (oil)	**9.0**

cases white liners are not needed on board, as a lightly pigmented thin film can opaque dark rawstocks. This fact could effect substantial savings in expensive pulps. Where dyes or colored pigments are used in the film, the color is concentrated on the surface rather than distributed through the entire top liner. Elimination of beater cleaning after each color should be helpful.

Coated wrappers and cartons for butter, lard, bacon, cheese, chocolate and other materials appear to have advantages over the presently used ones.

Standard coating methods

A very brief description of present-day processes for obtaining protective coatings should help to point out the advantages of this new method.

Organic-solvent coatings. This method consists of dissolving a resistant synthetic resin in a solvent, either with or without plasticizer, and applying to the paper or board. The solvent immediately pulls into the rawstock and allows the fibres to wick through. A second application is very helpful, but the chance of continuous film without any fibre wicking is still poor. A third application can usually cure this fault, but the amount of resins used is high and the solvent loss is very excessive. High solvent retention in most of these coating resins presents a very difficult problem of drying. The added plasticizers also tend to migrate into the rawstock, leaving a brittle film.

Hot-melt coatings. Hot-melt application eliminates the need for solvents and usually one application is sufficient. The plasticizer problem is still present, however, and the difficulty of coating with hot melts of high viscosity is well known. The resins must, of course, be thermoplastic.

Dispersion or latices coatings. Water dispersions or latices of protective resins are showing some promise. They are low in viscosity and can be coated onto a raw sheet with almost any type of coater. Here again, however, the coating tends to soak into the sheet, so that a continuous film is not formed overlying the rawstock. A number of the latices also darken with age and oxidize to a brittle film. When organosols or plastisols are used, their plasticizers tend to migrate out of the film into the fibrous rawstock, again leaving a brittle top film.

Laminating. Laminating grease-resistant papers, cellophane or metal foils to the base stock desired, by means of adhesives dissolved in a solvent or by hot-melt adhesives such as amorphous wax, is a method widely used. The biggest problems encountered here are, of course, high costs and failures of the adhesive, especially when contacted with hot products.

Precipitation coating method

The precipitation method of coating has the advantage that the coating solution can be applied to any type of rawstock by any standard coating method. The film-forming material used in this process is a water-insoluble hydroxyethyl cellulose that has been controlled in etherification so that it is soluble in aqueous sodium hydroxide solutions, from about 3 to 7% sodium hydroxide, but in no other solvents.

This hydroxyethyl cellulose is dissolved in a 4 or 5% sodium hydroxide solution to form a viscous material which is applied to the paper by means of any suitable coating machine. The material is applied to form a continuous coating on the surface of the paper. The diagram shown as Fig. 1 illustrates the method.

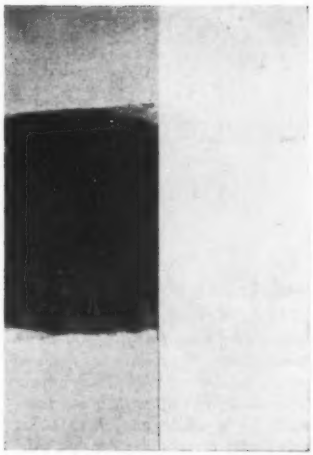
Immediately after the hydroxyethyl cellulose solution is applied to the paper or board, it is contacted with an aqueous salt solution which immediately precipitates the hydroxyethyl cellulose from its solution by eliminating the sodium hydroxide solvent, the hydroxyl ion of which is converted into water. This is done by an ion interchange between the sodium hydroxide and a water-soluble compound which has an ion which is reactive with the sodium hydroxide to form a soluble sodium salt, and which also has an ion which is reactive with the hydroxyl ion of the sodium hydroxide to form water.

Useful salts for this purpose are the acid salts such as monosodium phosphate, sodium bisulfate, sodium bicarbonate and the like, and also ammonium salts such as ammonium sulfate, chloride and the like. These acid salts are regenerated and corrected to pH by adding acid to a recirculating system.

The elimination of the sodium hydroxide as such from the solution prevents any deterioration of the paper which would result from the action of the caustic.

The hydroxyethyl cellulose film overlying the rawstock after precipitation is in a swelled form, but is not tacky in any way and after a water spray—to eliminate soluble salts, if need be—the coated paper is passed through squeeze rolls and then directly to drier rolls. Because the water is no longer held in the adhesive, solvent-release problems are nil. The squeeze rolls remove a large portion of the water that is present in the swelled film or colloid. Normal dry-

(This article continued on page 172)

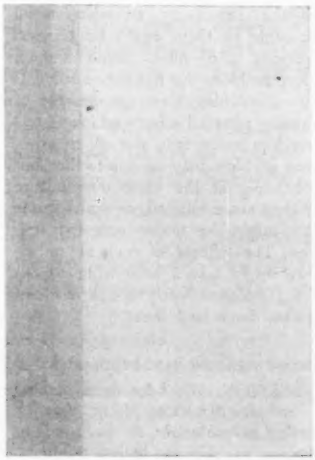


COMPARISON of oil-test results on same 50-50 groundwood-sulphite stock coated (left) with 20% starch and 80% Stellar clay and (right) with 10% HEC and 90% Stellar clay. The photovolt brightness reading on the sample at left dropped from 67 to 32 after oil was applied; on the HEC sample at right, the reading dropped only from 79 to 70.

TABLE I—OIL AND SOLVENT PENETRATION
Rawstock – 26# (24 x 36 - 500) completely unsized for accelerated tests.

Description of sheet	Coat wt. lbs. per 1,000 sq. ft.	Time for a dye-colored oil or solvent to penetrate sample			
		Solvent naptha (Toluol)	Turpentine	Ethyl acetate	Corn oil
Uncoated	0	0 sec.	0 sec.	0 sec.	0 sec.
7% HEC* 93% Stellar (Edgar Bros.)	4	1 sec.	2 sec.	7 sec.	40 sec.
10% HEC* 90% Stellar	4	17 sec.	42 sec.	2 min.-30 sec.	50 min.
15% HEC* 85% Stellar	3	2 hrs.-30 min.	2 hrs.-30 min.	3 hrs.-30 min.	Over 24 hrs.
20% HEC* 80% Stellar	3	Over 24 hrs.	Over 24 hrs.	Over 24 hrs.	Over 24 hrs.
20% Starch 80% Stellar	3	0 sec.	1 sec.	1 sec.	21 sec.
50% HEC* 50% TiO_2 (Rayox 510)	2	No penetration	No penetration	No penetration	No penetration
100% HEC*	1	No penetration	No penetration	No penetration	No penetration

* Hydroxyethyl cellulose.



FOR BETTER PRINTING only, where greaseproofness is not required, a coating of only 7% HEC, with 93% Stellar clay, produces the improvement shown on right side of sample. This is Manila board and the photovolt brightness readings are 62 on the left side of sample and 80 on right.

Questions & Answers

This consultation service on packaging subjects is at your command. Simply address your questions to Technical Editor, Modern Packaging, 575 Madison Ave., New York 22, N. Y. Your name or other identification will not appear with any published answer.

Instability of laminated sheets

QUESTION: Recently we have been trying to laminate two different transparent films to produce a flat and smooth sheet. Both films appear stable alone, but after they are laminated for a while one sheet either curls badly or wrinkles on one side. Since neither transparent film is cellophane, we do not understand why they show this instability after lamination. Can you explain this?

ANSWER: Plastic films generally show a high degree of dimensional stability to atmospheric conditions in comparison with paper, cellophane, etc. Therefore, the instability which you mention is not due to atmospheric differences in temperature or humidity, but is undoubtedly a result of your laminating operation. If you are using solvents of any kind in the laminating adhesive, small amounts of them could be trapped between the plies. Even though these residues are not active solvents for either film, they are capable of causing physical effects which distort one film more than the other. Also, your problem may be due to the films not being at the same temperature as they are combined, or perhaps one film might be under excessive tension. The effects of such an unbalance might take a little while to develop sufficient force to curl or wrinkle the laminated sheet.

Detecting leaks in vacuum packs

QUESTION: We have been making up samples of various plastic films for testing as materials to be used in vacuum packing one of our products. We find that some samples lose their vacuum in a few weeks, yet we cannot detect any holes or leaking seals in the packages. Can you suggest a good leak-detection device or a test method that we might use?

ANSWER: The loss of vacuum in some of the plastic film samples is undoubtedly due to permeation of air through the film and not because of any holes or poor seals and seams. Most thin plastic films will transmit significant amounts of air and other gases.

In your case the film area is relatively large and the time element long enough for the vacuum to be lost by air permeation. There are some plastic films with almost negligible rates of air transmission and often two types of films are laminated to reduce the transmission still further.

A simple and quick test for pinholes or seam leakage is to immerse the sample in water in a closed glass container so that a high vacuum can be applied. If there are any leaks as the vacuum is slowly increased, they will be seen and can be located by a stream of bubbles. Such a test will not detect failure due to air permeation by the plastic film, however. The measurement of air or other gas diffusion requires special apparatus and a skilled technician.

Paper packages for jams

QUESTION: We are interested in using a paper cup or some other type of paper container for the packing of honey, jams, etc. Such a container would be very helpful to us in case restrictions reduce our supply of present packages. Are paper containers for these products satisfactory and can you suggest constructions and materials for their manufacture?

ANSWER: In your question you do not state whether these containers are to be shipped through regular distribution channels for long-term storage of these products, or if they are to be used as transit containers for short-term storage and use. The first problem is quite difficult because the product must be packed hot and carefully sealed if the product is to be preserved for any length of time. Paper containers for these products under such circumstances are not used commercially in this country, although satisfactory paper packages of this type have been developed abroad for these products. However, if you wish to package your product for rapid turn-over, then single-serving, small-sized paper cups and similarly shaped units are entirely satisfactory for this purpose. Such packages usually consist of a strong wax paper or board, and they are fabricated in many different ways to give an attractive and rigid small-sized container, usually with a slip-on or snap-in lid. Since the product is in this container for a relatively short time and handled under special conditions, these containers are entirely satisfactory.

Uniform distribution of coatings

QUESTION: One of our new packaging materials has a coating which makes the sheet heat sealing and greaseproof. However, we are having some complaints about pinholes and skips in the coating. Since the coating is transparent, we are at a loss to know how to control the quality of our production. Can you offer us any suggestions that might aid us in solving our problem?

ANSWER: Presumably, your coating is stable and has the required functional qualities. Also it is assumed that your base material for the coating is smooth and uniform and that you apply more than the minimum amount of coating needed to meet the requirements. Thus your problem is not one of applying insufficient coating, but rather of applying it continuously and uniformly distributing it over the base.

The simple answer to this problem is to add enough of a color dye to the coating solution to give the finished coating a slight tint. By the use of such a dye, it will be an easy matter for your operators to see by inspection when the coating shows pinholes or poor weight distribution.

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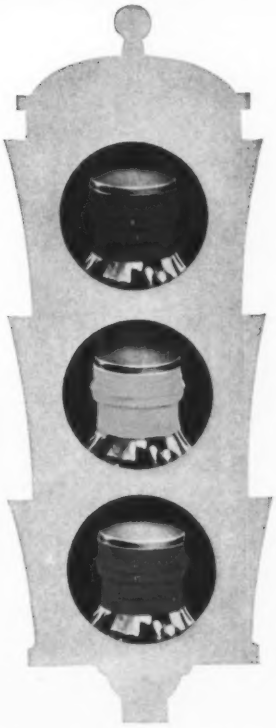

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By arrangement with Switzer Brothers, Inc.

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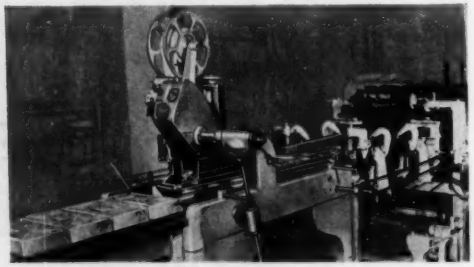
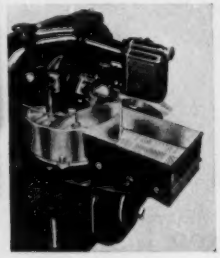
Equipment and materials

A NEW PORTABLE LABELER-IMPRINTER which imprints and applies thermoplastic roll stock labels to the tops of packages either on or off center automatically has been introduced by American Machine & Foundry Co., 485 Fifth Ave., New York. It can be operated as an inde-



pendent machine or used in conjunction with any wrapping machine when connected at the delivery end of the wrapper. Packages as small as 4 by 1 by ½ in. to as large as 18 by 6 by 10 in. can be labeled and imprinted, according to the company. In addition to a no-package-no-label feature, the machine uses rubber printing plates which are easily changed.

A HIGH-SPEED WRAPPING MACHINE for hard candies said to be the fastest of its type is being sold and serviced through Caesar A. Mascherin, 220 W. 42nd St., New York. Built in Italy by G. D. Societa Anonima of Bologna, the machine is reported to be the result of extensive



Wrapping machine (left) and finished packages it produces.

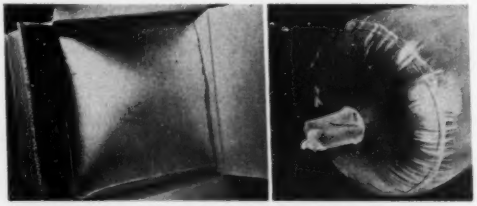
engineering and development and to be unique in its versatility and output. Designated as "G.D. 2350," under United States Patent, the machine will wrap hard candies, with solid or filled centers, with the double twist ends at a rate of 350 wrappings per minute. Wrapping material, in roll form, may be of wax or parchment paper, cellophane, or aluminum foil unsupported or a lamination of aluminum foil and wax paper. For perfect centering of legends on printed wraps, an electric-eye control is supplied. The machine is also adaptable to wrapping filled hard candies of special shapes, since it is equipped with a speed variator.

In addition to the double-twist wrap, the machine may also be adapted for the basket and bag-type wraps, shown in the accompanying photograph, with speeds for these forms of wraps ranging from 200 to 220 per minute, according to the type and shape of the piece to be wrapped and the material used. By the simple interchange of feeding disks, it is possible to wrap a large variety of hard candies, since every disk may be used for a different-sized product, within reasonable limits. Change-over time from one type of wrap to another is effected in about 15 minutes.

A battery of eight to 10 machines would require only one attendant, it is said.

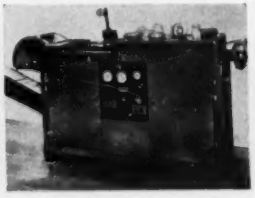
COLOR METALLIC AND COATED ACETATE materials now available for packaging and display purposes from Coating Products, 136 W. 21st St., New York 11, have been gathered in a new specimen chart. Seventeen metallic translucent colors, 10 chalk colors of opaque coated acetate, 15 transparent tints on clear cellulose acetate, 4 chalk iridescent types and 4 transparent iridescent types are included in the color samples. All materials shown in the chart are available in gauges ranging from 0.003 to 0.020 in 750-ft. rolls 20 in. wide or in slit webs from 1 to 20 in. wide. They also can be cut to specified sheet sizes.

A NEW VINYL PLASTIC FILM BARRIER material named "K-flex VD" is now in production by R. L. Kuss & Co., Inc., Findlay, Ohio. Development of K-flex VD is of special interest to packagers of foods, condiments, concentrates, pharmaceuticals and chemicals. It is reported to be completely non-toxic, impermeable to water and air, and to the corrosive action of many acids, salts and chemicals. It also



remains flexible at low temperatures, according to the company. K-flex VD is distinguished by a characteristic golden color and is translucent enough to permit identification of contents. It is reported to be competitive in price with other plastic films and is currently available without priorities. At present it is being used as liners for paperboard and metal containers, as a seal for closure of large drums and other containers and as pre-formed liners. The film can be sealed thermally, mechanically or electronically.

PRODUCTION MODELS OF A STRETCH-WRAPPING machine to handle 8, 10¾ or 13-in. width rolls of Pliofilm are now being manufactured by the Stokes & Smith Co., division of Food Machinery & Chemical Corp., 4900 Summerdale Ave., Philadelphia, 24, Pa. Development of this automatic machine



which feeds the film from the roll, heats it to the desired temperature, feeds it over the vacuum receiving pocket and twist wraps the film over the article before delivering the wrapped article, has been underway for several years. The current models will take odd-shaped

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Tough, transparent Kodapak Sheet works wonders for textiles. Used to pre-package towels and washcloths, for example, it keeps sets intact—fresh and clean on counter or shelf. Details of weave, pattern and color "sing out" and sell.

Due to essential government orders . . . together with critical shortages of basic materials, current supply of Kodapak Sheet is necessarily limited. In your planning please consult your local representative or write

Cellulose Products Division, Eastman Kodak Company, Rochester 4, N.Y.

Sales offices in New York, Chicago, Dallas. Pacific Coast distributor: Wilson & Geo. Meyer & Co., San Francisco, Los Angeles, Portland, Seattle. Canadian distributor: Paper Sales Limited, Toronto, Montreal.

Towels and washcloths: courtesy of Jas. McCutcheon & Company, N.Y.

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If you are faced with manpower losses, or with production speed-up requirements, you are undoubtedly seeking ways to save time and conserve labor on your packaging line.

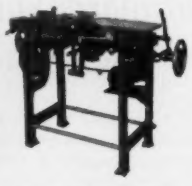
Here's a way that offers valuable speed-up potentials.

PETERS WAY Highly Successful

Peters Machinery Company offers far more than just a line of versatile, efficient packaging machinery. We offer a PETERS WAY of packaging—plus recommendations for a coordinated procedure that eliminates costly, unnecessary operations and saves valuable time. Obviously that means dollar savings for you too.

Peters Machinery Company makes packaging machinery to handle interlocking folding cartons for general food products, bakery goods, lard, shortening, frozen food and similar packaged products, as well as specialized bakery machinery.

Peters Junior Forming and Lining Machine



Peters Junior Folding and Closing Machine

Send a sample of your carton, and tell us your problem. Learn what the PETERS WAY can do for you—without cost or obligation.

Peters MACHINERY CO.

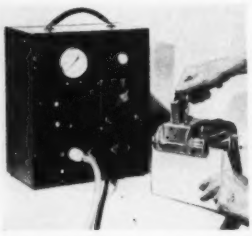
4712 Ravenswood Avenue — Chicago 40, Illinois

Equipment and materials

articles up to about a 5-in. diameter sphere and have a production output from 12 to 16 per min.

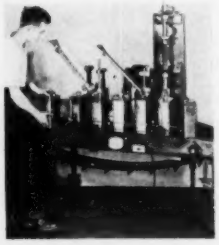
LIGHT-WEIGHT, PORTABLE SEALERS

engineered to seal thermoplastic coated and laminated packaging materials with positive pneumatic pressure have been introduced by Packaging Industries, 50 Church St. Montclair, N.J. Weighing only 4½ lbs., the sealing jaws of the machine, Model 6, can apply from 10 to 80 lbs. of pressure. Dwell time is automatically and positively controlled by an in-built pneumatic timer. Temperature can be thermostatically controlled in a range from 250 to 500 deg. F. Once the pressure, temperature and dwell time have been set in the proper cycle, the operator's only job is to position the material and trip a trigger in the hand grip. When the seal is complete, the movable jaw retracts and the trigger is released. It is claimed that the machine will seal foil and other barrier materials over splices and wrinkles, through contamination and without delamination.



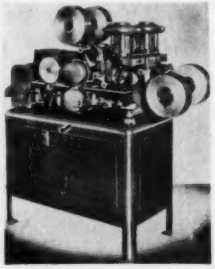
A NEW AUTOMATIC CAPPING MACHINE

made exclusively for feeding, closing and sealing the Upressit brand of closures and over-seals has been introduced by the Upressit Products Corp., 420 Lexington Ave., New York. The machine is designed to handle all sizes from pint cans to 2-gal. cans and except for the manual loading of cans, caps and sealing bands, is fully automatic. It has a capacity of 21 cans per min., according to the company. The conveyor belt connected by a series of lugs which act as centering points under the feed chutes and sealing devices, houses eight cans. The belt is mechanically timed with the action of the vertical closing mechanism and moves intermittently after each phase of the feeding and closing operation is completed.



A NEW PACKET FORMER, FILLER AND SEALER

said to be particularly adaptable to packaging powdered milk, instant coffee, chocolate, other beverage or drug powders because of its precision metering mechanism, is the "Unipak" produced by the E. G. Staude D.v., Sperry Corp., 2673A University Ave., St. Paul 4, Minn. The machine makes and fills packets of 1¾ to 3 in. wide and from 1⅛ to 9 in. long. It can be set to make two sizes of envelopes simultaneously, one on each of two production lines. Packets may be made of cellophane, foil, paper, fibreless-cotton films and other heat-sealing materials available in a strip form. On many of these



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***NEOROTO** — Lacquer gravure inks that we formulate with a wide range of properties.

Gloss or matte finish, scuff resistance, quick drying, and adhesion to many surfaces are some of the features that can be included to your specification.

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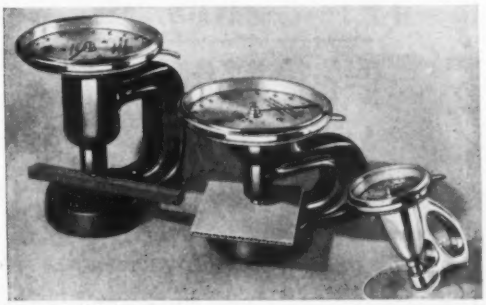
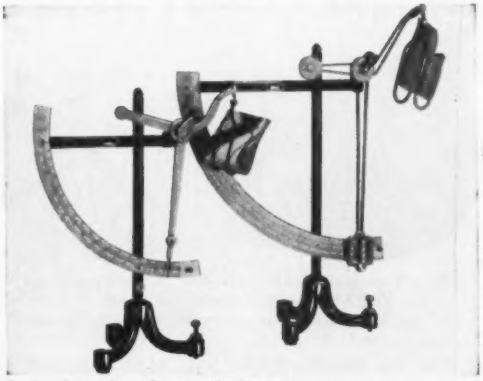
Cady Packaging Micrometers for accurate calipering of boards, papers, foils, plastics, felt, fabrics, metals, any material up to ½" thickness. All have glass covered, horizontal dials, for quick, direct readings. Used throughout industry, wherever accurate measure is important. Complete line includes Laboratory, Desk, and Portable models. Write for complete information and prices.



Basis Weight Scales, accurate, direct reading—no computation necessary. Tissue Scale on left; Paper Scale on right; weigh sheet of known size to determine 480 or 500 sheet weight. Boxboard Scale also available. Write Cady for complete data.



Cady Bursting Strength Tester registers bursting pressure in lbs. p.s.i. for "Cady" or Mullen test. Meets CCC specifications. Electric motor actuates uniform 12 second testing cycle. Extremely accurate every time corrugated clamp prevents slippage of material under test. For boxboards, papers, fabrics and other materials requiring uniform burst tests.

Write for complete information and prices of Cady Testing Instruments for packaging materials: Basis Weight Scales for papers, tissues, boards; Micrometers, Burst Testers.

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Get the benefit of our wide experience and specialized technical know-how* in laminating foils and films on scrim and paper. Consultations without obligation.

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Wright Field for Air Force Airplane Engine Envelopes

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All applications under AN-C-67b

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for Q.M. Food & Container Institute 3-in-1 Ration Pack

Data on construction, put-up, physical characteristics, and uses obtainable upon application.

ACME BACKING CORPORATION
BROOKLYN 6, N.Y.

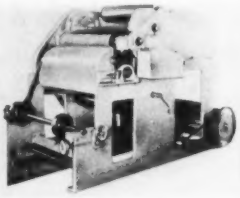
*Army-Navy "E" awarded for World War II service work.

Equipment and materials

materials, a rate of 200 units per min. is practical, according to the company, although output rates are controlled by a variable speed unit and also depend upon the material and size of packet.

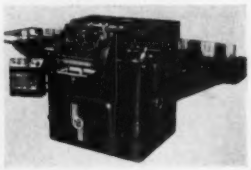
A MEASURE MARKER AND ROTO PRESS

which the manufacturer, Inta-Roto Machine Co., Richmond, Va., reports has a wide variety of uses, is now available. As a conventional one-color rotogravure press, the machine will print a web up to 24 in. wide, using printing cylinders up to 14 in. in diameter. As a measure marker, the press will accurately measure and indicate units in feet or yards, etc., on acetate, cellophane or any other material that can be roto printed. By a simple adjustment of the cam arrangement, the interval between numbers can be altered to various measurements which are printed from a standard roto cylinder of any width up to 24 in. One example of its use as a measure marker is the printing of 1-yd. cut marks on the acetate sheet which usually separates layers on a spool of ribbon. Such a sheet can be printed with yard markers consecutively numbered from one to 50. The yard markers not only show premeasured cuts to facilitate ribbon sales, but give a perpetual inventory of yardage remaining on the spool.



HIGH-SPEED LABELING MACHINES

manufactured by Morgan Fairest Ltd., Fairway Works, Sorby St., Sheffield, England, are being introduced in the United States. The continuous labeling feature of the "Banks" labelers, as these machines are named, is accomplished by the use of four-sided label gumming and delivery turrets. The first bottle or container to enter the machine releases the slide carrying the label box which then moves forward and under pressure a label is left adhering to the gum face of the first turret. As the label box withdraws, the turret makes a quarter turn in a clockwise direction. Another label is then pressed onto the next face of the gum turret while the first, now gummed, label is transferred to the second, vertical, four-sided delivery turret by means of a transfer finger which emerges from the gum turret. The delivery turret, fitted with rubber faces, accepts the transferred label and holds it in position by vacuum during the interval that it rotates in a counter-clockwise direction. After two quarter turns by the delivery turret, the label is offered gummed side out in line with and parallel to the conveyor moving the containers through the machine. The bottle which, in entering the machine started the release of the label through the gumming mechanism, travels through the machine and meets the label as it is presented by the delivery turret. The bottle or container is made to revolve, at a calculated speed, across the face of the label by means of the pressure from the revolving drum which forces the container against the label as it passes through. Thus, while the machine is in operation, one label is being accepted from the delivery box onto the gum turret, a second label is being transferred simultaneously to the delivery turret on which there are already

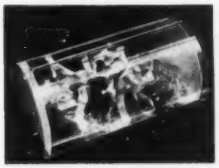


two other labels—one being under the rolling pressure of the container and one held in readiness to move into position on the next container.

The machines have standard variable speed controls for labeling at rates ranging from 2,400 and 10,200 containers per hr. Six different models are available, including the BTM Mark D, illustrated, which is suitable for use in combination front and back labeling. This model applies labels up to 4 in. in width; other models can accommodate labels small enough to use on vials only ¾ in. in diameter.

ONE-PIECE TRANSPARENT FLORAL CONTAINERS

which are shipped to florists as flats are now available from The Window Pak Co., 1212 Lodi St., Syracuse, N.Y., in six different sizes. The collapsible containers are made of transparent cellulose acetate and polystyrene sheeting and die-cut, coated paperboard which is used as the side and bottom sections. The exterior of these sections has a white finish, while the interior has a light green coating which is said to be water repellent. To set up the container into its "Quonset-hut" shape at the time of use, the florist simply folds the oval side sections upright, pulls the free ends of the two pieces of sheeting up, bending them to meet over the top of the flowers and tucks them into slots die cut in the top of the side sections. The "Flora-Pak" container illustrated measures 10 by 5⅝ by 4¾ in. and is made of 0.0075-gauge acetate. The line includes containers large and long enough to use for long-stemmed roses, containers smaller than the FloraPak, and rectangular boxes.

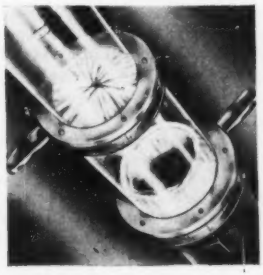


SQUARE GLASS PRESCRIPTION BOTTLES

recently redesigned feature improved label space for the ½- and 1-oz. size by replacing the sloping shoulder design of the former bottles with a new high square shoulder shape. This change is a particular advantage to druggists who have had a label trimming problem. The streamlined, modern design has been adopted by Owens-Illinois Glass Co., Toledo, Ohio, for its Emerald Green Dry Rx Squares line and is available in containers of ½-, 1-, 2½-, 3¾-, 4½-, 6½-, 8½- and 16-oz. sizes.

A NEW TYPE OF METERING VALVE

with flexible diaphragm which is said to prevent material passing through the valve from contacting any of the moving metal parts, thereby eliminating possible jamming and clogging, is now available from the Syntron Co., 250 Lexington, Homer City, Pa. The diaphragm may be made of cotton duck, nylon, rubber or other material suitable to the particular application. It operates similarly to the iris diaphragm of a camera—rotating the control lever increases or decreases the opening of the diaphragm and the flow of material. According to the company, the fabric diaphragm will withstand

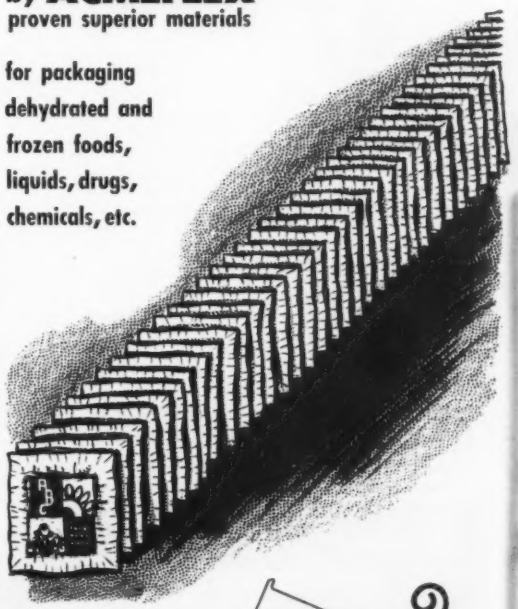


from the first to the millionth-

they're perfectly protected by* ACMEFLEX

proven superior materials

for packaging dehydrated and frozen foods, liquids, drugs, chemicals, etc.



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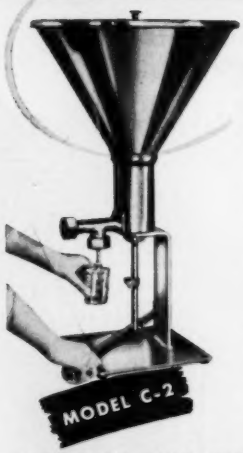
FILLING BOTTLES, JARS, TUBES, CANS



The Anderson Hand Filler is fast, easy to operate and strictly sanitary. It handles liquids, semi-liquids, creams, pastes and greases. Hopper capacity, 5 gallons, quantities up to 16 ounces dispensed per stroke. Entire machine, except base plate, is stainless steel or nickel silver. Easy to clean. Rubber feet under base to prevent slippage.

Filler (Model C-2-3) can also be supplied with foot treadle.

Send for Bulletin No 7-29

Anderson

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Cheaper
than Acetate Laminating

Better
than Lacquer or Varnish

LUSTRALITE PLASTIC COATING

for labels, wraps, covers, cartons

vinyliting — lacquering — varnishing — heatseals
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ALgonquin 5-4446

Equipment and materials

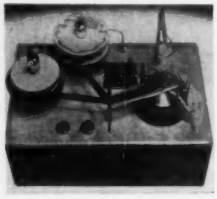
many months of usage and may be replaced at low cost. They are available in five different sizes to fit diameter openings up to 12 in. The valve can be readily attached to bin and hopper discharge openings, supply chutes and ducts, it is reported.

SMALL-SIZED HINGE-COVER CARTONS
with side-corner locks can now be set up automatically at the rate of 90 per min. using a specially adapted model of the Tray-Lock machine manufactured by the Package Machinery Co., Springfield, Mass., according to the company. Revisions in the design of the Model A Tray-Lock machine make this maximum output rate possible and the company also reports that interchangable parts are available to use if several carton sizes or simple trays are required.

FLAT SHEETS OF PRESSURE-SENSITIVE TAPE
in almost any size, printed in colors, made square or die cut as labels, are now being furnished by Topflight Tape Co., York, Pa. Named "Print-Stix," each sheet has a protective backing covering the adhesive side which makes handling easy. Any quantity above a 5,000 minimum may be ordered.

NEW FLEXIBLE BARRIER MATERIALS
including laminated combinations of kraft-polyethylene, kraft-foil and acetate-foil are now available from the Crystal Tube Corp., 538 S. Wells St., Chicago. The line is developed to meet JAN P-117, JAN P-121, JAN P-131 and MIL 6056 specifications, the company reports.

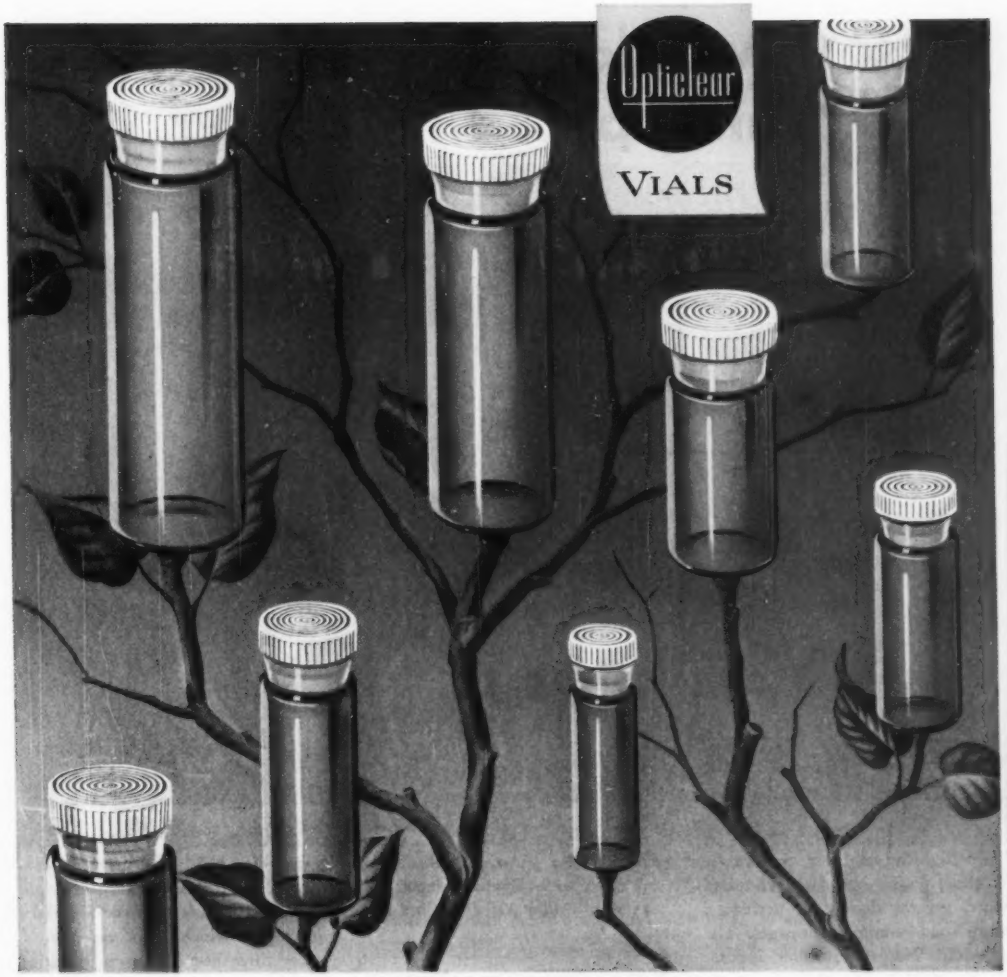
A NEW AUTOMATIC BOW-MAKING MACHINE
that produces up to 150 multi-petaled bows per hour in various diameters is of special interest to gift-wrapping sections of department stores. Developed by Tymatics, Inc., 321 Texas Bank Bldg., Dallas 2, Tex., the bow spinner is reported to make possible considerable savings in labor as well as ribbon yardage.



Two dials on the machine control the number of petals looped on the plastic spindles and the diameter of the finished bow. The size or color of ribbon can easily be changed in 3 seconds, according to the company that makes the machine.

A NEW COPOLYMER PLASTIC FILM
for drum liners and bags has been developed by the Protective Lining Corp., 22 E. 17th St., New York. The drum liners and bags are electronically welded and tested, it is reported, and can be fabricated in sizes and shapes to fit outer packages.

A FAST-SETTING ADHESIVE
for tube-winding machine use, said to be particularly suitable in the manufacture of spiral or convolute-wound hot-liquid containers because of its resistance to boiling water, is now available from Federal Adhesives Corp., 210-220 Wythe Ave., Brooklyn 11, N.Y. Designated as "Liquid-Tite #69," the adhesive is a cream-colored liquid of medium viscosity and is said to be clean running and to leave no residual odor.



Customers like the clean-cut, quality look of Opticlear Vials.

Give your product the package it deserves —KIMBLE OPTICLEAR VIALS

THESE GLEAMING, lustrous glass containers reflect the superiority of your product.

When you pack in Kimble Opticlear Vials, you give your contents the sales advantage of sparkling eye appeal *plus* unique protection.

New special plastic stoppers provide a positive moisture-proof seal . . . keep contents free from moisture and dust. Even after they are removed and replaced repeatedly, these resilient stoppers reseal tightly.

Opticlear Vials improve the salability of every dry product we've tried in them. Find out how attractive *your* product can look in these outstanding vials.

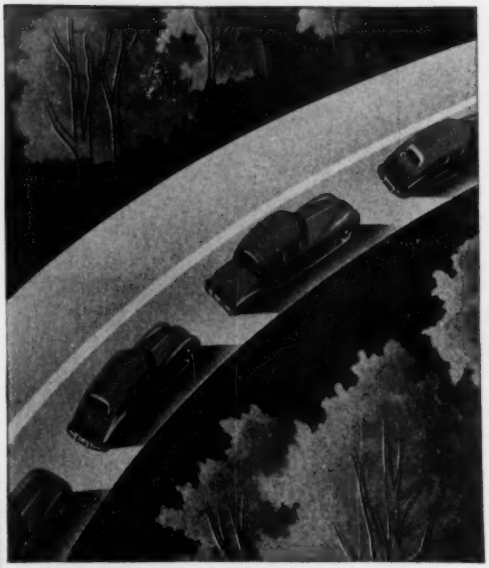
* * *

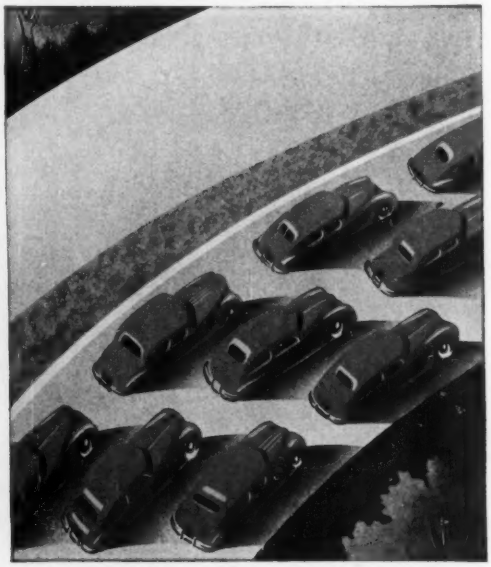
Send us the sizes you use, and we'll ship free samples for your inspection.

KIMBLE GLASS TOLEDO 1, OHIO
Division of Owens-Illinois Glass Company

How would you move *more* traffic past this point?

Step up speed? *or* *Widen the road?*

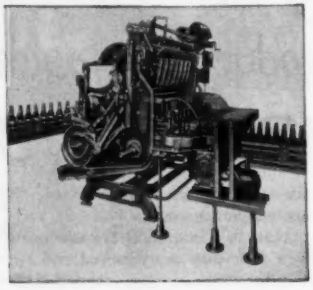




To a highway engineer, the answer is clear. Faster speeds mean extra wear, greater danger of accidents, more road-jamming stoppages. The solution? Naturally, wider roads.

It's equally true in your bottling shop. Labeling, for example, is far more efficient and productive when bottles move s-l-o-w-l-y in 4, 6, 8 or 10 rows at a time. By using the *multiple* . . . the *"superbigbway"* principle, you profit by gentler handling of bottles . . . less bottle breakage. Your machines stay on the job year after year with fewer "repair bills".

And here's a surprising plus. You can have wide labeling roads and maximum bottle traffic, yet use *less* space. How? With slow-speed, *compact* Ermold Automatic *Multiple* Labelers. These proved-in-service machines—which label two out of every three beer bottles in America—give you fine-looking packages, too. That's because their slow label wipe allows the glue to set for accurate, permanent labeling.



Add up these exclusive advantages of Ermold Automatic Multiple Labelers and you will know the "superhighway" key to higher output in your bottle shop. Ask your Ermold representative to prove it.

EE 148

EDWARD ERMOLD COMPANY, 652 HUDSON STREET, NEW YORK 14, N. Y. *71 Years of Labeling Leadership*

OFFICES: BOSTON • CLEVELAND • LOS ANGELES • MILWAUKEE • ST. LOUIS • SAN FRANCISCO • MONTREAL • TORONTO • MEXICO • CUBA • ENGLAND

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FOUNDED 1880 INCORPORATED 1911

SPRA-TAINER Does It Again!

Other Famous Tetco Products
Moth-O-Blitz and Insect-O-Blitz
In 6 oz. and 12 oz. Crown SPRA-TAINER

The Tetco Company's COLD ReLIEF is a handy, safe, effective nose-and-throat medication and powerful vaporizer, all in one. COLD ReLIEF is pressure-dispensed . . . penetrates nasal passages thoroughly, medicates areas usually untouched by nose drops, inhalants, and ordinary atomizer preparations. Ideal for Hospitals —Sick Rooms—Nurseries! Perfectly safe for babies.

The pressurized container chosen for COLD ReLIEF is the original lightweight, low-cost propulsion can, Crown SPRA-TAINER with exclusive "No Side Seam—No Top Seam" construction and eye-appealing modern design.

ALWAYS LOOK TO CROWN FOR LEADERSHIP IN CREATING AND MANUFACTURING FINE CANS FOR EVERY PURPOSE.

One of America's Largest Can Manufacturers

CROWN CAN

Division of

CROWN CORK & SEAL COMPANY

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Plants and people

James L. Spencer has been elected vice president and director of sales of **Olin Products Co., Inc.**, which will distribute Olin cellophane in the packaging field. The company, a subsidiary of Ecusta Paper Corp., will have temporary headquarters at 270 Park Ave., New York, until July 15 when offices will be established at 655 Madison Ave. Mr. Spencer was formerly vice president in charge of merchandising for the Industrial Tape Corp. According to Mr. Spencer, cellophane from the new Olin mill, which is scheduled to start production in September, will be distributed on a limited geographical basis initially.

J. L. Spencer

Mr. Spencer has also announced the appointment of **Benjamin H. Heim** as manager for the Middle Atlantic and Southern States Division. Mr. Heim was formerly vice president of Cellu-Craft Products Corp.

A new plant will be opened next month by **Crystal Tube Corp.** at 6625 W. Diversey Ave., Chicago, for converting flexible barrier materials including plain and printed cellophane bags, envelopes and pouches, printed cellophane, foil and glassine rolls and sheets, holiday bands, cellophane and Pliofilm utility rolls, Pliofilm and polyethylene bags.

The company also announces the appointment of **Kenneth Dvorak** to the Chicago sales staff. Mr. Dvorak was formerly with Goodyear Tire & Rubber Co. in the plastics division.

F. K. Zimmerman has been elected president of **Lynch Corp.**, Toledo, Ohio, manufacturers of packaging machinery, following the resignation of **M. H. Pendergast** as president and director. Mr. Zimmerman was previously secretary-treasurer of the company.

Detecto Scales, Inc., Brooklyn, N. Y., and **Yale & Towne Mfg. Co.** have concluded a sales agreement whereby Detecto has purchased the patents, equipment, parts and inventory of Yale & Towne's industrial scale business. Detecto also receives the rights to the "Kron" trademark from Yale & Towne, according to the announcement made by Yale & Towne officials.

In connection with the recent merger of the **Bagby Corp.**, Evanston, Ill., as a division of **Triangle Package Machinery Co.**, announcement has been made of the expansion of Triangle's Eastern divisional sales offices. These offices are now located in the Academy Bldg., 1212 Raymond Blvd., Newark, N. J. **Walter P. Muskat**, who has been named divisional manager, has been transferred from the Central division to Newark. The office will handle sales, installation and service scheduling for both the Triangle line of dry-weighing, measuring and filing equipment and the Bagby line of semi-solid, heavy-viscose and paste-filling equipment for New York, Connecticut, New Jersey and Pennsylvania.

A new company named **Goodren Products Corp.** has been established at 136 W. 21 St., New York, to handle the production of military orders exclusively. The company is producing barrier bags for joint Army-Navy specifications such as JAN-P-117 and JAN-P-131, plus laminated acetate foil materials.

T. E. Alwyn, general manager of sales, and **R. F. Hepenstal**, former assistant general manager of manufacture, have been elected vice presidents of **American Can Co.** Mr. Alwyn becomes vice president in charge of sales, while Mr. Hepenstal becomes vice president in charge of manufacture. **L. W. Graaskamp** and **R. C. Taylor**, previously the officers in charge of these two functions, have been assigned to broader administrative responsibilities, according to recent announcements.

T. E. Alwyn and (left) R. F. Hepenstal

W. E. Vaughn has been appointed assistant general manager of sales. **G. W. Reese** has been appointed general manager of manufacture. Recent promotions have also advanced **F. J. Green** and **C. F. Lausten** to assistant general managers of manufacture, while **R. B. Thompson** and **A. T. Augensen** become managers of manufacture for the Atlantic and Pacific divisions, respectively.

W. E. Vaughn (left) and G. W. Reese

George Rawak, vice president of **Wraps, Inc.**, New York, distributor and converter of transparent wrapping materials, has joined NPA in the capacity of Assistant to the Chief, Plastic Sec., Containers & Packaging Div. of Industry Operations.

The Gaylord Container Corp., St. Louis, Mo., announces the appointment of **G. Gordon Hertslet** as head of the company's newly formed customer public relations and advertising departments. Mr. Hertslet succeeds **Kent Ravenscroft**, who recently resigned as advertising manager to become vice president of the Security National Bank & Trust Co., St. Louis.

Standard Specialty & Tube Co., Rochester, Pa., announces the company name has been changed to **Standard Collapsible Tube Co.** The firm recently moved its plant and offices from New Brighton, Pa.

R. L. Lindemann has been appointed district sales manager of the **Fibre Drum Div., Continental Can Co.**, for the Chicago district. He succeeds **Martin Brandon**, who retired recently.

Warren A. Lacke has been appointed general manager of industrial relations for Continental Can Co. He succeeds **J. E. Niederhauser**, formerly vice president in charge of industrial relations, who retired recently.

The $1,250,000 expansion program involving the construction of an addition to the Detroit plant of the **Hinde & Dauch Paper Co.** is nearing completion, according to company reports. The additional floor space provided by this new building will be occupied by an 85-in. corrugating unit.

George A. Fitzgerald and **John L. Callahan** have been appointed sales manager of automotive products and merchandising director, respectively, of **Industrial Tape Corp.**, New Brunswick, N. J., a subsidiary of Johnson & Johnson. Mr. Fitzgerald has been with Industrial Tape since 1939. Mr. Callahan was formerly sales manager of Flako Products Corp. and was with Young & Rubicam, Best Foods, Inc., Butterick Co. and Armstrong Cork Co. previously.

Construction of a $21,000,000 kraft containerboard mill by **The Mead Corp.** and the **Macon Kraft Co.**, an affiliate company owned by Mead and Inland Container Corp., will be started in Rome, Ga., in the near future, it has been announced.

Announcement has been made of the appointment of **William Murray** as assistant

This H & D corrugated display box makes barbeques extra fattening—for sales figures!

The customer is "just looking for a fork to roast hot dogs"—until she spies this gay yellow and black display, with its clever Hamburgrill and its Cube Steak Broiler. Then her picnic menu suddenly expands beyond "just wieners"—and sales figures expand beyond "just forks for roasting hot dogs."

H & D package action can increase profits on *your* products, too, by such grouping of related items for tie-in sales, or by giving better display . . . providing secure protection . . . increasing multiple sales. Write for H & D's 11-volume "Little Packaging Library." Hinde & Dauch, 5101 Decatur St., Sandusky, Ohio.

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Very personally yours!

Thilco *Trademarked* packaging papers...

provide product identification as "very personally yours" as your own fingerprint!

There's no chance for substitution or mistaken identity when your product is packaged in its personal protective wrap. Immediately it acquires new merchandising values of individuality, prestige, and eye-appealing attraction. When used for bulk wrapping, it greatly simplifies inventory counting and control. Thilco trademark wrappers can be produced in any number of grades and types that typify Thilco's *functional* papers, and in most cases are ideally suited for use on high-speed automatic wrapping machines. Matching bags can also be furnished from our own mill.

AT YOUR SERVICE

Our paper engineers and artists will be glad to suggest the proper "functional" paper required for protecting your product and submit sketches of how your trademark or any other custom design can be applied.

Thilco functional papers include: Decorated Papers, Glassines and Greaseproofs, Watervapor Barriers, Specialty Kraffs, and Specialty Bags.

THILCO

Functional Papers FOR PROTECTION THAT COUNTS!

NEW YORK • CHICAGO
DETROIT • MINNEAPOLIS

THILMANY PAPER CO. • KAUKAUNA • WISCONSIN

Plants and people

manager of the gummed tape division of **Western Waxed Paper Co.**, San Leandro, Calif. **John Havens**, formerly with Zellerbach Paper Co., replaces Mr. Murray on the sales staff. The company also announces the appointment of **Dallas Hughes** as assistant inside sales and service manager.

J. Leigh

An informal poll of 44 advertising clubs affiliated with or listed by the Advertising Federation of America voted **Joseph Leigh**, board chairman of **Einson-Freeman Co., Inc.**, Long Island City, N. Y., "Speaker of the Year 1950." Mr. Leigh's prize talk, "10 Top Display Ideas and How They Grew," was selected as the most interesting and useful talk heard by the clubs, which named a total of 72 speakers in the poll.

James W. Sharpe has been named plant manager of the **Anchor Hocking Glass Corp.** plant in Winchester, Ind. **Harris Snell**, formerly assistant plant manager of the Connellsville, Pa., container plant succeeds Mr. Sharpe as manager of that plant and **Robert E. Deetz** assumes Mr. Snell's position as assistant.

Rudolph W. Kugler has been assigned to the New York area staff of **The Dow Chemical Co.**, Midland, Mich., as a plastics coatings salesman. He was formerly associated with Heil Process Equipment Corp.

The appointment of **Denton Anderson** as assistant vice president of **Plax Corp.**, Hartford, Conn., was recently announced by the company. Mr. Anderson is a member of the American Chemical Society, TAPPI and the Forest Products Research Society.

The new **Andre Paper Box Co.** plant in San Leandro, Calif., has been cited as one of the "significant new industrial plants" built in 1950 by the editors of *Factory Management & Maintenance*. The award was made on the basis of its speedy erection, low cost per sq. ft. and utilization on non-critical materials.

The board of directors of **Fibreboard Products, Inc.**, San Francisco, announces the election to the board of **Edmund J. Farina**, vice president in charge of sales, and **Robert E. Bundy**, vice president in charge of production.

H. C. MacDowell has joined **Brown-Bridge Mills, Inc.**, Troy, Ohio, manufac-

The SEALTITE SYNCHROMATIC

Produces a *BETTER PACKAGE* from a Standard Paper Bag at Big Savings

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CONSOLIDATED PACKAGING MACHINERY CORP.

BUFFALO 13, N.Y.

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We manufacture and distribute a complete line of materials for packaging under the following specifications.

MIL —	JAN —	AN
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JAN-B-148	JAN-P-140	AR-63
JAN-P-108	JAN-P-658	RM-101
JAN-P-116	AN-B-20	MIL-C-6056
JAN-P-117	AN-C-67b	UU-P-271a
JAN-P-125	AN-E-1b	100-14-A
JAN-P-127	AN-T-12a	19-B-13

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Inexpensive... **MINIATURE ROTOGRAVURE PRINTING PRESS**

...10" web width (also 15" and 20" web widths)

...Use it in tandem with your bag making or packaging machines ...or use it to preprint your packaging webs.

Floorspace needed ...just 6½' x 4', that's all.

This is KILB's Two Color Miniature Rotogravure Press. It consists of two Single Color Units, mounted one above the other. Includes dryers and unwind and rewind mechanisms. This is our latest design Two Color model that sells for only $2933.00 complete (less motors). Write for literature and prices.

FRANCIS C. KILB CO.

Manufacturers of Miniature Rotogravure and Aniline Multi Color Web Presses

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PRODUCTION AND PERFORMANCE...

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SILICA GEL

the ideal desiccant
for method II
dehydrated packaging

Millions of bags of Culligan Silica Gel have been delivered for a multitude of Method II packaging applications. Your assurance of Culligan service, quality and reliability is attested in the fact that over 2,000 leading organizations have consistently specified Culligan Silica Gel. Carloads of this Culligan grade A desiccant have been produced on prime contract directly with the Military Services.

- Culligan Silica Gel meets current military specifications. Prices are competitive.
- Available in all standard bag sizes, in bulk, or custom packaged to fit your immediate needs.
- National field-staff service of expert Culligan packaging engineers.
- Two convenient shipping points: Northbrook, Ill. (suburb of Chicago); San Bernardino, California.

description...

Culligan Silica Gel is a highly adsorptive granular form of pure silica, consisting of hard, glassy, rounded particles . . . ranging from 6 to 80 mesh in particle size. Interspersed with minute capillaries, it is estimated that one cubic inch of Silica Gel contains an acre of surface available for adsorption! Culligan Silica Gel will adsorb up to 40% of its own weight of moisture, and is non-diliquescent.

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and specification sheet

CULLIGAN DESICCANTS

CULLIGAN ZEOLITE COMPANY
Home Office • NORTHBROOK, ILLINOIS

Copr. 1951 C. Z. Co.

Plants and people

turers of gummed tape, as the company's sales representative in the Atlantic Coast states. He was formerly with Atlantic Gummed Tape Co.

Herbert H. Clarke, Jr., and **Charles W. Niederauer** have been appointed vice presidents of the **Borden Co.'s Chemical Div.** Mr. Clarke has been manager of the division's West Coast activities since 1946 when he was appointed Western sales manager. Mr. Niederauer has been executive assistant to the president of the division for the past three years.

The Champion Paper & Fibre Co., Hamilton, Ohio, has broken ground for a new building addition at the plant, which is part of the company's expansion program.

The appointment of **James B. Mahoney** as New England sales manager has been announced by **Wright Machinery Co.,** Durham, N. C., a subsidiary of Sperry Corp., makers of automatic packaging machinery.

J. B. Mahoney

Rheem Mfg. Co. has awarded the contract for construction of a new $1,500,000 steel shipping container plant in Linden, N. J. The building will contain approximately 150,000 sq. ft. of manufacturing and office space and will house an exceptionally large metal lithographing press.

The Oxford Paper Co. announces the appointment of **Walter W. Holland** as manager of production at its Rumford Mill in Rumford, Me. Mr. Holland has been actively associated with the paper industry in Canada for many years. He is also general superintendent of the Quebec North Shore Paper Co.

The Package Machinery Co., Springfield, Mass., announces the following personnel changes: **J. J. Kelly** to field sales supervisor for territories outside of the New York area; **Lee Evans** to the Boston office to take charge of all sales in that area and supervise carton machinery sales in western New England, upper New York State and the Cleveland and Atlanta territories; **Theron Russel** takes over the accounts formerly handled by Mr. Evans in the Chicago area, and **John W. Andrews** is now assigned to the New York office.

A Philadelphia sales office has been opened by **National Can Corp.,** with

Military Specifications for glues and paper products

☆ ☆ ☆ ☆ recommended materials to comply

No. of Specification Date of Latest Issue	TITLE	MATERIALS TO COMPLY
JAN-P-101 1 March 1945	Packaging and Packing for Overseas Shipment. Adhesive, Water-resistant, for Sealing Fibreboard Boxes	Type I or II, Grade A or B: CASCOLA CS-217-M
JAN-P-140 16 October 1946	Packaging and Packing for Overseas Shipment. Adhesives, Water-resistant, Case-Liner	Type I or II, Grade A—CASCOLA WP-311
UM-186 3 August 1945	Medicinal Products and Clinical Laboratory Reagents; General Specification for Containers (Packaging and Packing)	For gluing labels to Type I (glass) containers: LP-85

Other glues to meet JAN-P-117, JAN-P-120, JAN-P-125, JAN-C-1042, JAN-D-111, JAN-D-232, JAN-P-108, JAN-A-136 and many other specifications

● Send for your free copy of CASCO Service Bulletin 82, "Government Procurement of Wood, Plastics and Paper Products." Lists Purchasing Offices, includes complete Specification Chart, tells how to estimate glue costs. It's part of Borden's Glue Service. Address: Dept. MP71, The Borden Company, Chemical Division, 350 Madison Avenue, New York 17, N. Y.

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THAT PROTECT AND SAFEGUARD YOUR PRODUCTS

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IMMEDIATE ATTENTION
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WRITE, PHONE, WIRE for QUOTATIONS on YOUR REQUIREMENTS

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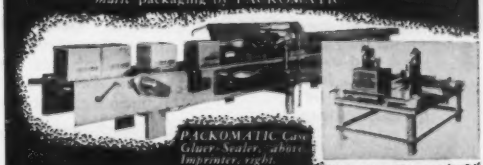
PRINT as you glue... as you seal corrugated shipping cases
WITH
PACKOMATIC
AUTOMATIC CASE IMPRINTER

Fibre shipping cases automatically packed, glued, sealed, counted, coded and imprinted with up to 8 lines on any or all panels—this can be yours to help reduce operating costs, increase earnings, lower prices to the consumer. Get facts about completely *automatic* packaging by PACKOMATIC



PACKOMATIC Case Gluer-Sealer, above; Imprinter, right.

PACKOMATIC

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YOUR BEST SOURCE
for All Types of Paper Labels

CAPACITY
Four Million
Labels per Day

America's Finest Label Plant
— COMPLETELY AIR CONDITIONED

Production goes forward at Kalamazoo Label — the year around — under ideal conditions for men, machines and materials. Our entire operation is air conditioned.

Controlling the weather, enables us to turn out more labels per day, do a finer job of printing, maintain closer register, eliminate spoilage.

This production edge is always reflected in our attractive price quotations. If you have any type of paper label problem, it certainly will pay you to consult us.

***Free* BOOKLET SHOWS WHY**

Write today for this 16-page booklet illustrating our production processes and sales methods which assure you of paper labels you will be PROUD to use at prices you will be HAPPY to pay.

KALAMAZOO LABEL COMPANY, KALAMAZOO, MICH
Label Manufacturers EXCLUSIVELY Since 1906

"KNOW-HOW"
• • • *Makes ADHESIVES Perform!*

We specialize in ALL industrial glues:

- Phenolic Resins
- Urea-Formaldehyde Resins
- Liquid and Dry Caseins
- Resin-Latex Combinations
- Polyvinyl-Acetate Emulsions
- Hot Melts and Thermoplastic Pick-Up Gums
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Now you can buy the PERFECT glue . . . engineered to meet *your* specific needs!

Our experienced Chemical Engineers study your operations and analyze your requirements. Then they prescribe the EXACT adhesive to do the job, and test it on your equipment and materials.

Corn Belt's "Engineered Adhesives" save thousands of dollars for hundreds of satisfied customers. May we prove that this extra service means extra profits for YOU?

Write *today* for free booklet.

CORN BELT ADHESIVES
COUNCIL BLUFFS, IOWA

Plants and people

John Newton as the local representative. Location of the office is Room 880, Drexel Bldg., 5th & Chestnut Streets.

C. G. Bennett

C. G. Bennett has been named director of product development and consumer research for **Pacific Coast Foil Co.,** San Francisco, Calif. Mr. Bennett is well known in the packaging industry for his work in developing packages for fresh and frozen foods. He is a member of TAPPI and a charter member of the Western Packaging Assn. He was previously associated with Paterson Parchment Paper Co. and Paterson Pacific Parchment Co.

Miles N. Ripley has been appointed New York regional manager of the **Lamson Corp.,** Syracuse, N. Y., manufacturers of conveyors, pneumatic tubes, automatic pallet loaders and blowers. Mr. Ripley will locate at the company's new offices at 295 Madison Ave.

The appointment of **Donald O. Wynocker** as assistant to **Charles Walker,** district sales manager for Ohio, Michigan and Indiana, has been announced by the **Plaskon Div., Libbey-Owens-Ford Glass Co.** Mr. Wynocker has been with the division since 1943 and has specialized in glues and industrial resins products, which he will continue to handle.

David H. Ross, president of **Gair Co. Canada Ltd.,** was elected a director of **Robert Gair Co., Inc.,** New York, at a recent board of directors' meeting.

Ninety-seven members of the field organization of **Armstrong Cork Co.'s Glass & Closure Div.** recently attended a three-day sales conference at the home office in Lancaster, Pa. Included in the conference program was the premiere showing of a new sound-slide film on the division's drug sundries.

At a joint luncheon meeting of the **Western Packaging Assn.** and the **San Francisco Sales Executives Assn.** held recently, more than 200 members and guests of the associations heard **John K. Chapel,** well-known newscaster and commentator on the West Coast, as the guest speaker. **Tom E. Bruffy,** West Coast sales manager of The Dobeckmun Co., was master of ceremonies. Officers of the Western Packaging Assn. present included **Leo P. Blank,** Stetcher-Traung Lithograph

MANHASSET
Does the Job Right!

★ MEETS ALL REQUIREMENTS
★ GIVES UTMOST PRODUCTION

ANILOX PRESSES 2-3-4 Color

★ HANDLES VARIETY OF STOCK
★ SKILLFULLY DESIGNED
★ CARRIES THE LOAD
★ MANY SATISFIED USERS

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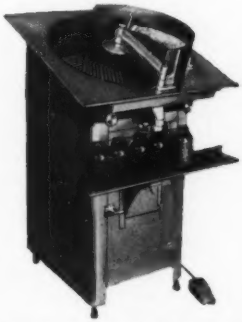
COMPLETE FACILITIES FOR SPECIAL DEVELOPMENT WORK

PerfeKtum TAB-COUNT
Model T-400



• A modern counting and filling machine for accurate and economical packaging of a wide range of tablets and capsules. PerfeKtum variable speed counter operates by count—not weight—and can be set to count and fill up to 1500 bottles of 100 tablets per hour. A series of custom built counting discs may be supplied with each machine for packaging your different tablet products.

Write for details on the TAB-COUNT and our other ampul washing, filling and sealing equipments.

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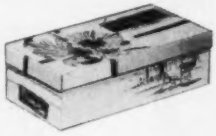
LUSTEROID
Vials and Tubes

You cut costs right down the line with Lusteroid vials and tubes. These modern plastic containers are strong, tough, unbreakable. They are printable, so you save money on labeling, They need no protective packing, so you save on handling cost. They are light in weight, saving materially on shipping expense. All colors of the rainbow—clear or opaque. Standard diameters from ¼" to 1¼" and lengths up to 6". Cork, slip-on or screw-cap closures. Write for details and samples.

LUSTEROID
Container Company, Inc.
10 West Parker Avenue
Maplewood, New Jersey

Look at these *aniline-printed* shoe cartons.



See their clean, sharp, crisp printing.

Remember they were printed from MOSSTYPES®

...the *pre-madeready, precision-molded* rubber printing plates.

All three cartons printed by FRANK C. MEYER, INC., Brooklyn, N. Y. and Lawrence, Mass.

WORLD'S BEST SOURCE for... RUBBER PLATES and DESIGN ROLLERS

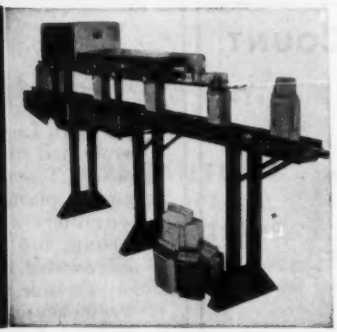
MOSSTYPE CORPORATION

From ART to PLATES... 33 FLATBUSH AVE., Brooklyn 17, N. Y.

a complete production service for converters everywhere

FRY BAG SEALER

makes sift-proof seals in heavy weight paper bags



Why struggle along with antiquated methods when the Fry Model CSG automatically makes a double-folded *sift-proof* heat seal in the top of any heavy weight paper bag. The first fold is securely heat sealed; the second is glued for extra safety.

Perfect for granular or fine products such as foods, chemicals, insecticides and the like.

Bags handled include polyethylene and pliofilm lined, and those with thermoplastic top sealing bands. Simple adjustments for bags of various heights.

When writing, please submit a sample of your bag and your product.

George H. FRY Company 167 Front Street, New York 7, N. Y.

Plants and people

Corp.; **Fred Todt**, Fred Todt Co.; **Peter D. Bowley**, Peter D. Bowley & Associates; **Kenneth K. Dean**, *Good Packaging*; and **Hugh W. Hicks**, Marathon Corp.

J. E. Campbell

John E. Campbell has been appointed display manager of the **Sherman Paper Products Corp.**, Newton Upper Falls, Mass. The company also announces the installation of additional equipment for the production of its cotton-stitched and wire-stapled packaging sleeves and tubes made of flexible corrugated.

Recent additions to the **Sun Chemical Corp.'s** plant at Clearing, Ill., are reported to have increased the floor space to permit production of commercial offset and letterpress inks as well as news black and colors, rotary black and rotogravure inks. The plant provides storage capacity for over 750,000 gal. of oils and solvents.

The board of directors of **Kehr Paper Products Co.**, Philadelphia, announces the election of **Alan F. Kehr** as executive vice president.

American Type Founders announces the transfer of **Edwin B. Hundley** to Atlanta, Ga., as manager of that branch, succeeding **Edgar A. Fowler**, who has retired. **Walfrid H. Williamson** replaces Mr. Hundley as manager at Buffalo, N. Y.

Louis H. Fischer has been appointed sales engineer on the staff of **Miller Sales Agency**, Chicago. The company handles packaging equipment manufactured by **The Arthur Colton Co., Div., of Snyder Tool & Engineering Co.** in the Chicago area.

The Colton company also announces the appointment of **William F. Schafer** as sales engineer in the company's New York office.

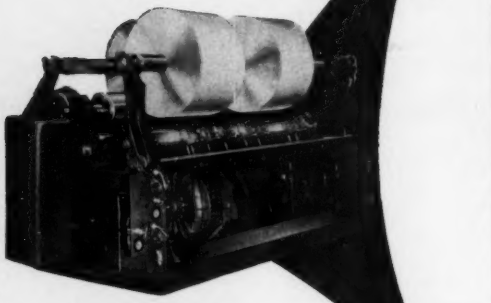
Burton A. Ford, vice president of the **St. Regis Sales Corp.**, New York, has been named Chief of the Paper Shipping Sack Sec., Containers & Packaging Div., NPA. Mr. Ford has been in charge of St. Regis Mid-Atlantic district. During World War II he served on the War Production Board as a consultant on paper shipping sack specifications.

Morningstar, Nicol, Inc., New York, manufacturers of starches, dextrines and adhesives, is celebrating its hundredth anniversary this year with a series of

For accurate glass finish
—ARMSTRONG

Armstrong's engineers devote a good portion of their time to perfecting glass finish. The care they take with this phase of glassmaking is one important reason why these containers perform so well on the filling line. Many users of Armstrong's Glass claim this perfected finish is completely dependable in obtaining a safe, sure seal. Ask your Armstrong representative for details on these glass containers or write direct to Armstrong Cork Company, Glass and Closure Division, 2307 Prince Street, Lancaster, Pennsylvania.

BEFORE YOU BUY–
consider
the new B & S
duplex REWINDER



OUTSTANDING FEATURES:

- Simplicity of design
- Variable-speed Drive
- High speed (up to 1500 ft. p.m.)
- Compact—saves space
- Vibrationless
- Hydraulically driven differential Rewind Shafts
- Air-Operated Slitters for strips as narrow as ⅛ inch
- Accurate pressure control between Drum and Rewind Shafts
- All hydraulic and air Piping enclosed in Frame
- All Controls easily accessible
- Ease of operation and maintenance
- Efficient and economical

The new B & S #15 Duplex Rewinder is powered by a Louis Allis Eddy Current Type Variable-speed Drive. A variable volume pump driven by an A. C. motor supplies power to the rewind shafts, and the winder is powered by the Eddy Clutch. By placing the entire drive beneath the machine, B & S designers have saved valuable floor space.

Accurate pressure control and precision winding are achieved by pneumatic cylinders for raising and lowering the rewind arms. For full center winding rewind shafts can be locked in "out" position.

To eliminate all possible vibration, the B & S Duplex Rewinder is mounted on heavy cast-iron bedplate. Fully enclosed piping and easily accessible controls assure smoothness and efficiency in operation, as well as ease and economy in upkeep.

For further details write to The Bagley & Sewall Company, 500 Fifth Avenue, New York 18, N. Y.

BAGLEY & SEWALL
WATERTOWN, NEW YORK
designers and builders of QUALITY MACHINERY SINCE 1853
500 FIFTH AVE., NEW YORK 18, N. Y.

"PERFECT EVERY TIME"

printing on glass, plastic, metal and wood

Check the requirements of your current package. Will perfect, permanent, colorful on-the-package printing help it sell better? You bet it will. Write to Modern Decorating for details.

luxurious appearance

permanent bonding

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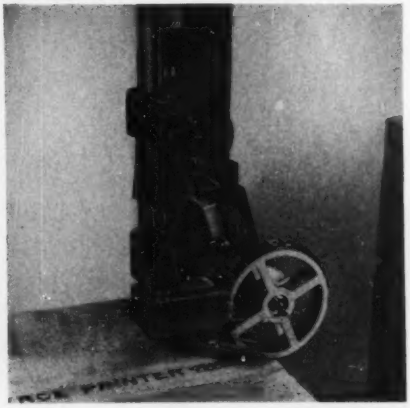
Phone: UNion 3-5585 LOngacre 4-1998
Silk Screen and Offset Printers on Plastic, Glass, Wood and Metal

PIERCE PRINTER



Automatic, friction driven Printer for continuous printing. Deep rubber type face for rough surfaces. Adapted for printing on brake lining, hose, lumber, etc. Other marking devices using steel stamps and rubber plates.

PIERCE WRAPPING MACHINE COMPANY
625 West Jackson Boulevard
Chicago 6, Illinois

Plants and people

events including the inauguration of a profit-sharing plan for all employees with two or more years of continuous service. The present president, **Joseph Morningstar,** is a grandson of the original founder.

H. C. Tull

Harvey C. Tull has been named general sales manager of the **Crown Can Co.,** Philadelphia. According to a recent announcement, Mr. Tull will have general supervision over all sales divisions and will report to **F. H. Braithwaite,** vice president and director of sales. Until recently he was Philadelphia district sales manager and manager of the company's Spra-Tainer and beer can sales division.

Stuart E. Kay, manager of manufacturing, and **F. Henry Savage,** assistant general sales manager, have been elected vice presidents of the **International Paper Co.**

The following appointments have been announced by the **American Machine & Foundry Co.: Fred K. Powell, Jr.,** as vice president in charge of engineering; **Harry P. Sparkes,** divisional vice president of the contract division; **Tyler Weymouth,** divisional vice president of the tobacco machinery and international division, and **E. J. Zimmer, Jr.,** as assistant divisional vice president of the contract division.

National Container Corp. is building a new $600,000 plant in Dallas, Tex., which will produce corrugated containers for the Southwest. The new plant will make corrugating board and finished containers; the present Dallas plant only fabricates boxes made from board supplied by other National plants.

Alan Irwin has been promoted to manager of the Detroit Division of the **General Box Co.** Mr. Irwin joined the firm in 1940.

The installation of a new five-color press at the Canajoharie, N. Y., plant of **Arkell & Smiths,** specialty and multiwall bag manufacturers, marks the completion of a $500,000 expansion program undertaken by the company. During the last nine months, increased printing capacity has been added to each of the company's plants.

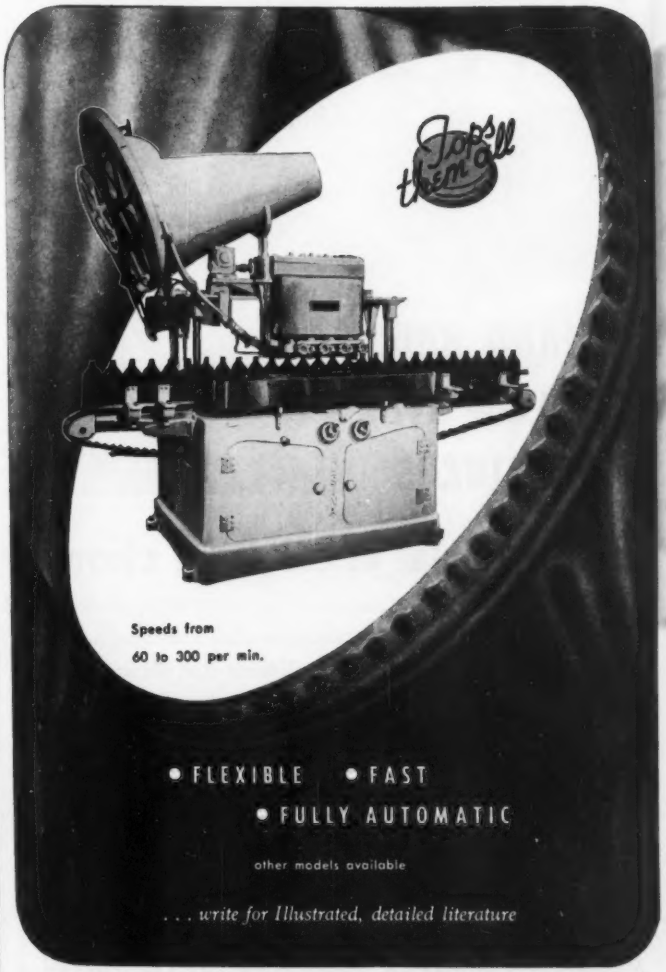
U. S. Automatic Box Machinery Co., Inc., announces a change in representation in the Midwest territory covered

RESINA

Cappers

new model RU200

the fastest screw-capping machine on the market—


Tops them all
Speeds from
60 to 300 per min.
• FLEXIBLE • FAST
• FULLY AUTOMATIC
other models available
. . . write for Illustrated, detailed literature

RESINA AUTOMATIC MACHINERY CO., INC.
BROOKLYN 31, N. Y.

NIEMAND BROS.
ROUND and OVAL
CONTAINERS

low cost metal or all-paper closures

Niemand Bros. containers can really help promote the sale of all sorts of merchandise. They adequately protect your products at all times. And efficient, low cost dispenser closures may be made entirely of paper when required.

Your needs—from designs through production to delivery—can be handled promptly. Immediate attention will be given your inquiry.

NIEMAND BROS. INC.
Manufacturers of PAPER TUBE PRODUCTS

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Plants and people

from its Chicago office. **Clay Willingham**, the company's present sales engineer, is leaving the Chicago area. His successor is **Charles Fago**, who will represent U. S. Automatic Box Machinery exclusively on the sale of their automatic packaging and paper box-making machinery. Mr. Fago will have headquarters at 209 W. Jackson Blvd., Chicago.

The Upressit Products Corp., New York, has appointed two new agents in Canada. **Renton Distributors, Ltd.**, 550 Beatty St., Vancouver, B. C., will serve as distributor for all of Vancouver and British Columbia. **The Paul Moore Co., Ltd.**, 265 Craig St., W., Montreal, Quebec, will serve the Montreal area. The Moore company also has offices in Winnipeg and Toronto.

Also announced by Upressit is the appointment of the **Ack Sales Co.**, P. O. Box 31, Kansas City, Mo., as distributor for the Kansas, Iowa, Nebraska, Oklahoma and Western Missouri territory. **H. D. Ackerman** of the Ack firm will be the agent for Upressit. Upressit manufactures caps and tamperproof seals for cans, bottles and other containers, and recently developed an automatic capping machine.

Plax Corp. has moved its headquarters, sales and accounting offices to 672 Farmington Ave., Hartford, Conn. The company's mailing address remains the same: P. O. Box 1019, Hartford 1, Conn.

Walter Landor & Associates, industrial designers, have moved to larger offices and studios at 143 Bush St., San Francisco. New telephone number is Yukon 2-3370.

Ralph Cunningham, vice president and director of **General Box Co.** and manager of the Detroit division, died recently at the age of 61.

Franklin W. Olin, founder of **Olin Industries, Inc.**, the parent company of Ecusta Paper Corp., which will start producing cellophane at its new mill this fall, died recently at the age of 91. Mr. Olin's widespread industrial enterprises grew from a small powder plant established in 1892 in East Alton, Ill.

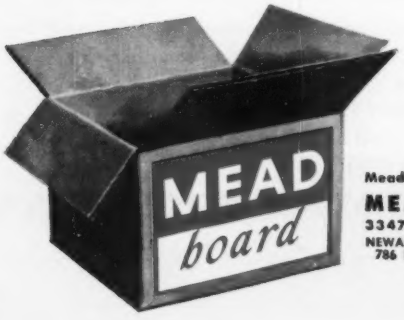
Whitney S. Hamnett, president of the **W. S. Hamnett Co.** and **Aluminum Foils, Inc.**, New York, American agent and a subsidiary, respectively, of the **Swiss Aluminum Co.**, died recently.

PLAY'S THE THING

The six years since the nation turned from heavy mayhem have seen a healthy traffic in the implements of fun. Millions of our people evidently seek surcease from the tensions of the times in more or less relaxing games, from tiddlywinks to skittles on the village green.

Sales of items describable as sporting goods have more than doubled in a decade. The retail take on them in each of the past four years has bettered the billion mark . . . shows no signs of abating. Their safe delivery into eager hands is assured, in most cases, by proper packaging in corrugated board.

A big extra margin of safety is achieved when MEAD Corrugating is shrewdly chosen. This rugged MEAD .009 Chestnut Corrugating is of chestnut and other selected hardwood fibers for maximum durability. Supplemented by MEAD Liner, this able-bodied board has successfully absorbed the buffets of distribution in innumerable channels of commerce, these past 21 years.



Mead Board is sold direct by

MEAD BOARD SALES, INC.

3347 Madison Road, Cincinnati 9, Ohio

NEWARK 2, N. J. 786 Broad St. | LYNCHBURG, VA. | CHICAGO 6, ILL. 205 W. Wacker Drive

HOLWEG PAPER AND CELLOPHANE BAG MAKING MACHINES • ANILINE PRINTERS

The C.P. 1 machine will produce Flat and Gusset bags from:

One roll of cellophane or paper
Two rolls of cellophane or paper
One roll of cellophane and one roll of paper.

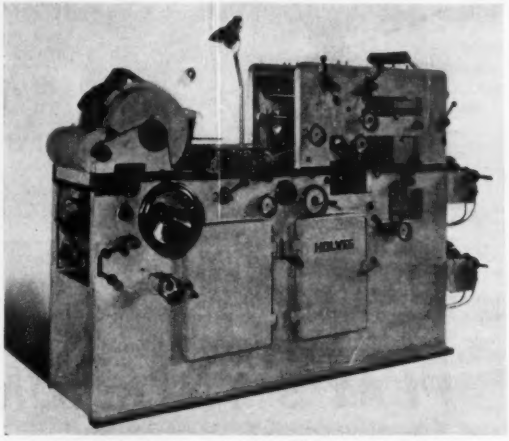
OUTPUT: Up to 500 bags a minute

Range of sizes, finished bags:

Width: 1-3/16" to 6-5/16"
Length: 1-3/16" to 9-7/16"

The machine operates without formers. Any and all widths are obtained by a simple adjusting device.

A machine is available for demonstration at our Chicago Showroom. For further particulars please write to –



HOLWEG C.P. 1 CELLOPHANE BAG MACHINE

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"Where can I purchase a.....?"

"We need a tube which will....."

"...and how can we make it stick?"

"What will keep my product moist when.....?"

"Our problem is to reduce caking of....."

"Who can redesign my package?"

Each month, the Readers' Service Department of MODERN PACKAGING answers scores of questions for our readers. Questions range from simple requests for information about the manufacture of a can, machine or box to requests which demand detailed, technical answers.

With their extensive files, reference library and wide knowledge of packaging materials, machinery and procedures, the members of the Readers' Service Department can usually supply the information you request. In addition, the technical and editorial staffs of MODERN PACKAGING are at their disposal for attending to questions which are particular "sticklers."

If you have any questions, feel free to forward them. There is no charge or obligation for this service. Address—Readers' Service Department, MODERN PACKAGING. A complete reply to your inquiry will be sent promptly.

MODERN PACKAGING

A Breskin Publication

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REPUBLIC FOIL

DELIVERS THE GOODS

SAFELY – READY TO USE

Users of aluminum foil for packaging of defense material, food and drug products can depend upon the outstanding quality of Republic foil to provide full measure of protection during shipment and storage. Foil wrapping safeguards material, equipment and components in "as produced" condition against the hazards of dirt, dust and moisture.

Republic specializes in the production of plain aluminum foil for conversion into finished packaging materials and other foil products. While defense requirements are now placing a heavy burden upon our facilities, we are doing everything in our power to fill all needs. We will welcome your inquiries.

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INCORPORATED
DANBURY **CONNECTICUT**

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REPUBLIC

For your information

The 13th Annual Forum of the **Packaging Institute** will be held at the Commodore Hotel, New York, Oct. 22-24, barring, of course, the outbreak of total war, according to **Herbert T. Holbrook,** chairman of the program committee. The program, to be based on a "Guns and Butter" theory, has been outlined as follows: Monday Oct. 22, "Washington Day"—general session under the direction of Mr. Holbrook on Government controls, a review of the packaging supply situation and new developments in packaging specifications; Tuesday, Oct. 23, "Technology Day"—under the direction of **Robert de S. Couch** in which the latest technical developments in packaging will be presented; Wednesday, Oct. 24, "Production Day"— under the direction of **John A. Warren,** where the current problems of production will get highly specialized attention. The Petroleum Committee and the Drug & Pharmaceutical Committee will hold two half-day seminars. Every effort is being made, said Mr. Holbrook, to avoid concurrent sessions that conflict on subject interest.

Joseph C. Feagley, vice president of Armstrong Cork Co., has been named president of the **Glass Container Mfrs. Institute.** First and second vice presidencies were filled, respectively, by **Howard D. Herger,** president of Pierce Glass Co., and **Philip O'C. White,** secretary of White Cap Co. Chosen as trustees were Mr. White, **Bert W. Cremers,** vice president of Wyandotte Chemicals Corp.; **William V. Fisher,** president of Anchor Hocking Glass Corp.; **J. Preston Levis,** chairman of the board of Owens-Illinois Glass Co., and **Joseph M. Nester,** president and treasurer of Obear-Nester Glass Co.

J. C. Feagley

The Packaging Machinery Mfrs. Institute will hold its 19th annual meeting Oct. 13-17 at the Mid Pines Club, Southern Pines, N. C., according to **Boyd H. Redner** of Battle Creek Bread Wrapping Machine Co., president of the Institute.

The National Canners Assn., National Food Brokers Assn. and the **Canning Machinery & Supplies Assn.** have set Saturday, Jan. 19, as the opening date for their 1952 convention in Atlantic City, N. J. The convention will bring together at one time all of the participating groups, as was the case in Chicago last February. The over-all convention will be in continuous session from Jan. 19 through Jan. 23.

The fall meeting of the directors of the National Canners Assn. will be held in San Francisco on Oct. 11, 1951, to be followed by the formal dedication of the new Western Branch Laboratory Bldg. in Berkeley on Oct. 12.

Also announced by the National Canners is the publication of the **1951 Canners Directory.** This is the 43rd of these annual compilations and consists of 248 pages. The association furnishes one free copy to each NCA member firm. Otherwise the Directory sells for $2.50 per copy. Orders are handled by the Information Division of the Association, 1133—20th St., N.W., Washington 6, D. C.

James D. Wise, president of the Bigelow-Sanford Carpet Co., has been elected to the newly created post of vice president for the General Management Division, **American Management Assn.** This is the newest of AMA's eight divisions—which include Personnel, Production, Office Management, Finance, Marketing, Insurance and Packaging. **Paul O. Vogt** of General Electric Co. has been re-elected as vice president for the Packaging Division.

Alvin S. Roberts of the Insurance Co. of North America will be chairman of the **1951 National Protective Packaging and Materials Handling Competition,** according to an announcement by **Ray C. Sell,** president of the **Society of Industrial Packaging and Materials Handling Engineers.** The Society will conduct the contest again this year in connection with its annual exposition to be held in the Cleveland Public Auditorium, Oct. 2-4. Thirty-five judges will consider entries on the basis of the following factors: Packaging—product protection afforded by the package, conformance to carrier requirements, ingenuity in application of materials and methods, ease of handling, economy and practical utility; Materials Handling—reduction of handling cost, economies in warehousing and utilization of storage space, increase of plant capacity, reduction of inventory, improvement of product protection, reduction of handling hazards, improvement of working conditions, facilitation of materials control and speed-up of delivery of product to consumer. Contestants need not be members of the Society to enter the competition and copies of the rules and regulations may be secured by writing to S.I.P.M.H.E., contest chairman, 20 W. Jackson Blvd., Chicago 4, Ill.

A discussion of recent developments in problems of plant maintenance, **"Techniques of Plant Maintenance—1951,"** has just been published by **Clapp & Poliak, Inc.,** management of the Plant Maintenance Show held in Cleveland last January. The new volume is a companion piece to "Techniques of Plant Maintenance—1950," containing the proceedings of the Plant Maintenance Conference held in conjunction with the show. The new volume, which is printed and bound, contains 228 pages and is illustrated with 48 tables, diagrams, etc. Copies are available from Clapp & Poliak, Inc., 341 Madison Ave., New York 17, postpaid for $6.

The Thilmany Pulp & Paper Co. has published a new Government specifications guide titled **"Thilco Government Specifications File,"** prepared by the company's technical staff. Those concerned with protective packaging will find the publication most helpful. Copies may be had on request to the Thilmany company at Kaukauna, Wis.

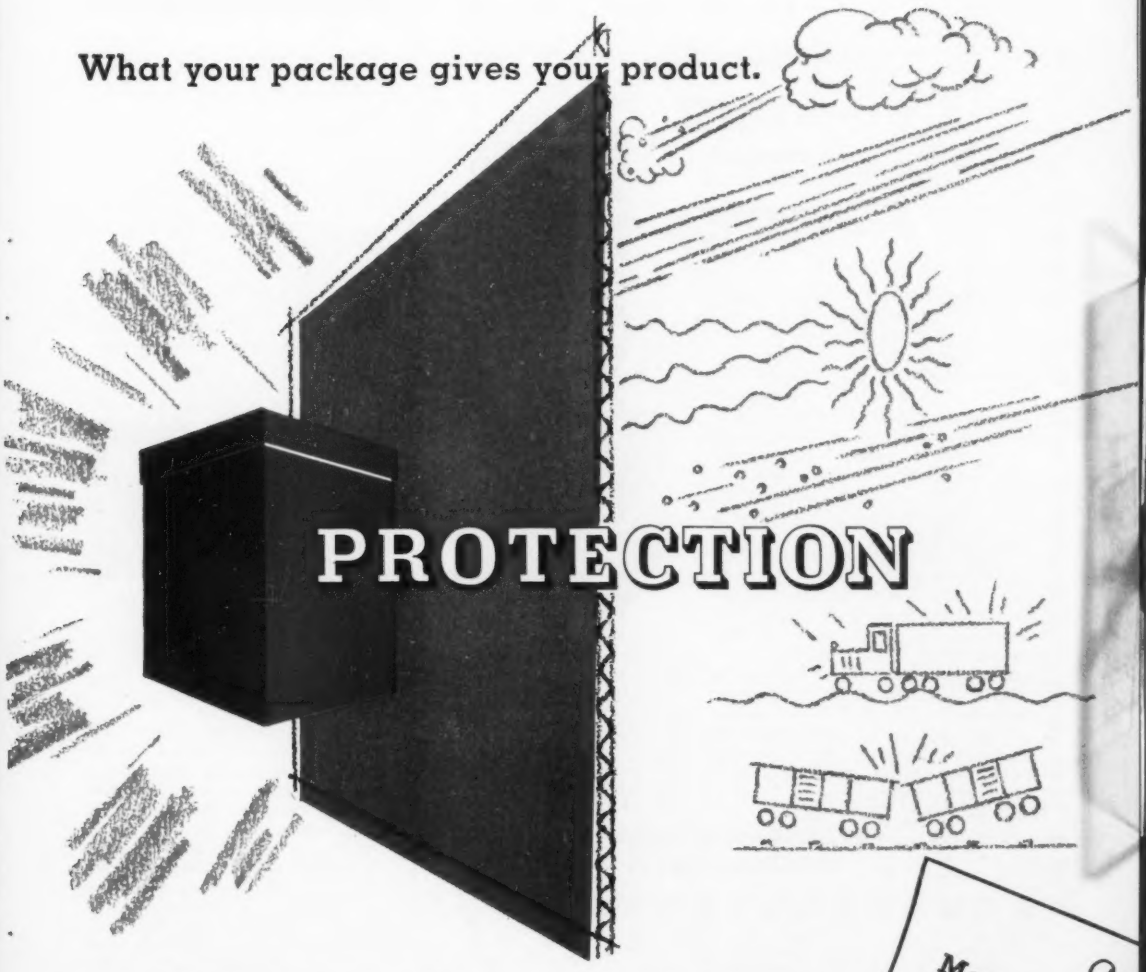
The second issue of "Confab," a new quarterly magazine published by **Acme Steel Co.,** is now being circulated. Featured in this issue are stories on how an integrated materials-handling program was set up at Nabisco, how strap kits are being used in Korea and how a Detroit manufacturer effected at 25% production savings through metal stitching. Copies of the publication are available without charge from Department A, Acme Steel Co., 2849 Archer Ave., Chicago 8, Ill.

The "extrusion-lamination" process of coating paper with Bakelite polyethylene is described in a 32-page illustrated booklet of technical data recently published by **Bakelite Co., a Division of Union Carbide & Carbon Corp.** and titled "Bakelite Polyethylene For Paper Coatings, Properties and Coating Methods." Copies may be had from Bakelite Co., a Division of Union Carbide & Carbon Corp., Dept. 1503, 300 Madison Ave., New York 17.

The first volume of the second edition of **"The Chemistry and Technology of Food and Food Products"** is now available from Interscience Publishers, Inc., 250 Fifth Ave., New York 1, N. Y. This completely revised and augmented edition was prepared by a group of specialists under the editorship of **Morris B. Jacobs,** adjunct professor of chemical engineering at the Polytechnic Institute of Brooklyn and chief organic chemist of New York City's

Packaging is important for protection—

What your package gives your product.



Your product deserves a better package—*for protection*

OLD DOMINION
Box Company, Inc.

Plants located throughout the South

Executive Offices: LYNCHBURG, VA. • *Sales Offices:* CHARLOTTE, N. C.

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POWDERS TABLETS FREE FLOWING SOLIDS LIQUIDS OR SEMI-LIQUIDS

package your liquid products automatically at lower cost!

✓ lower initial costs
✓ lower operating costs
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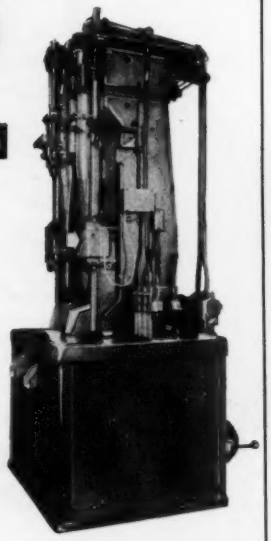
Leading, nationally known packagers have installed Transwrap liquid feed machines—for their (1) simplicity, (2) three-way economy, and (3) versatility. Their records prove high labor savings—one machine equals the output of fifteen to eighteen hand operators; plus additional savings on eliminating the purchase of ready-made bags. "Downtime" is practically eliminated; repairs are negligible.

Transwrap liquid feed machines offer you the full advantage of automatic, hi-speed packaging of a limitless variety of liquid and semi-liquid products — in the food, drug, chemical and other processing fields. Just to name a few . . . catsup, salad dressing, mustard, sauces, horse-radish, flavoring agents, oleomargarine, cheese, preserves, jams, paints, extracts, liquid chemicals and pharmaceuticals.



LIQUID FEED UNIT, SHOWN—designed to package all types of liquids and semi-liquids. Output 40 to 120 per min.—5 cu. in. to 80 cu. in.; pillow or fin-seal pkgs., all heat-sealing materials, sizes—1-13/16" x 3" to 5¼" x 13". Pressure feed by positive displacement piston type pump, or small Bosch-type pump. 4' x 5' x 8'; 2150 lbs.; ¾ h.p. motors, 1600 w.

TRANSPARENT-WRAP MACHINE CORP.

Need Help? Transwrap's engineering staff will be glad to assist you in analyzing your packaging requirements . . . make specific recommendations designed to improve your production—at lower costs.

Naturally, there is no obligation for this consultation service. Just check the coupon below.

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Company .....
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For your information

Health Department. Volume 1 is divided into three parts: fundamentals, unit operations and processes, and sanitary and quality control. Volume II, dealing with specific foods, and Volume III, which carries a section on packaging by **C. W. Browne**, advisory editor of MODERN PACKAGING, will soon be published.

J. Bailey

James Bailey, vice president and director of research for the **Plax Corp.**, was presented the **1950 John Wesley Hyatt Award** for distinguished achievement in plastics at the recent meeting of the **Society of the Plastics Industry.** Mr. Bailey received the award in recognition of his research in techniques and invention of machines for the successful extrusion of thermoplastics.

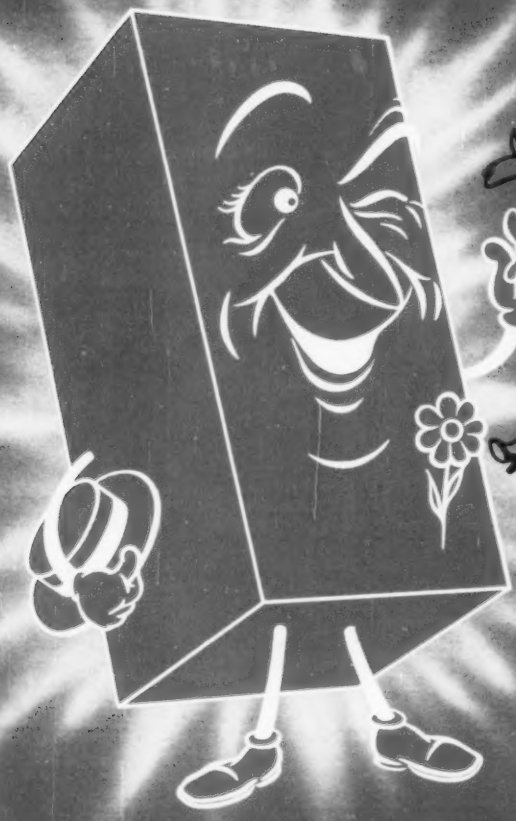
G. Brown

At the Society's recent annual meeting in White Sulphur Springs, W. Va., **Gordon Brown**, vice president of **Bakelite Co.**, a Division of Union Carbide & Carbon Corp., was elected president for the coming year. Mr. Brown was one of the founders of S.P.I. 14 years ago.

A useful new publication is "**The Pallatizer, Pallet Pattern Selection Guide,**" which tells at a glance the most efficient pallet arrangement for specific containers. It gives patterns for standard-sized pallets and has arrangements for every size of container that will fit them. Three fold-out charts list container dimensions from 6 in. up to the maximum size allowed by each pallet, with size changes in ½-in. increments. Diagrams show pallet patterns. The handbook, written by **Saul Goldweitz**, is available from **Materials Handling Laboratories, Inc.**, 795 Boylston St., Boston 16, Mass., at $6 a copy.

The birth and growth of the second largest source of aluminum in the United States is outlined in a new booklet, "Reynolds Aluminum and the Company That Makes It," just issued by **Reynolds Metals Co.** This 48-page book also contains details on Reynolds production facilities, products, fields served and other information designed to give a clear picture of the company and its operations. Copies of the book are available without charge on request to Reynolds Metals Co., 2500 S. Third St., Louisville, Ky.

SWITCHEROO...



a vital quality in any folding carton!

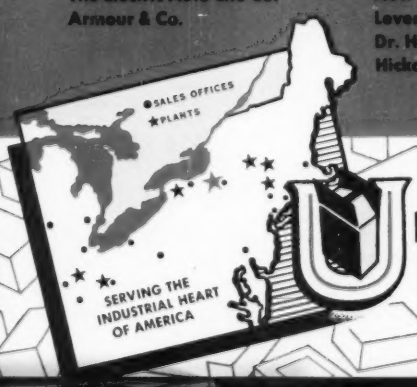
Ever see SWITCHEROO at work?
A customer walks into a store, starts to reach for an accustomed brand when suddenly SWITCHEROO . . . some eye-appeal, try-appeal, or buy-appeal in an adjoining carton makes her hesitate . . . re-consider . . . and finally select the competing product.

That's SWITCHEROO, Mister. The tireless salesman at the point of sale . . . the greatest hazard between you and your regular customer.

Let a United Board & Carton specialist show you a sample of your product in a folding carton with plenty of SWITCHEROO. No cost. No obligation. Just write or wire.

A few of the nationally famous companies who use United Board & Carton services

Seiberling Latex Products Co.
Diamond Match Co.
The Electric Auto-Lite Co.
Armour & Co.
The Kroger Co.
The Taylor Wine Co.
New Process Gear
Lever Bros. Company
Dr. Hess and Clark, Inc.
Hickok Manufacturing Co.



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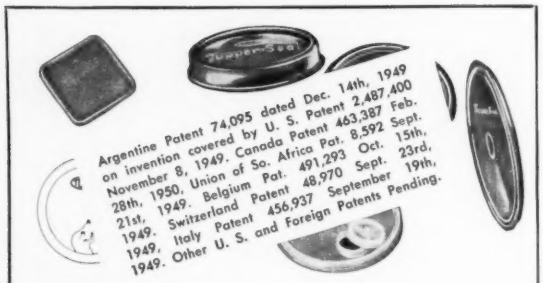
Carton Plants: SYRACUSE, VICTORY MILLS, COHOES, N. Y., SPRINGFIELD, O.
Board Mills: LOCKPORT, THOMSON, N. Y., URBANA, O.

Tupper Seal, air and liquid tight flexible covers fit, and are included in the sets of all Tupperware Canisters.



Argentine Patent 74,095 dated Dec. 14th, 1949 on invention covered by U. S. Patent 2,487,400 November 8, 1949. Canada Patent 463,387 Feb. 28th, 1950. Union of So. Africa Pat. 8,592 Sept. 21st, 1949. Belgium Pat. 491,293 Oct. 15th, 1949. Switzerland Patent 48,970 Sept. 23rd, 1949, Italy Patent 456,937 September 19th, 1949. Other U. S. and Foreign Patents Pending.

TUPPER! Seals

air and liquid-tight, flexible covers for Tupperware Tumblers, Canisters, Wonder Bowls, Cereal Bowls and many another container of glass, metal and pottery, the contents of which it is desired to keep fresh and wholesome.

TUPPER!

The Tupperware 50 oz. Canister is "standard equipped" with the Tupper Seal, air and liquid-tight flexible Pour All cover.

The Tupper Seal, air and liquid-tight flexible Pour All cover is used on every Tupperware 20 oz. Canister.

FORMAL NOTICE! 9th November, 1949

EXCLUSIVE!

U. S. Patent #2,487,400

The Tupper Corporation has attained a position of leadership in this industry by incurring great expense and expending painstaking effort in the development, design, manufacture and exploitation of its many world-known products.

The Tupper Corporation further has anticipated the inevitable attacks to which leadership is subject and has taken measures provided by law to preserve the creative rights to its products, methods and design by patent protection both in the United States and abroad.

Tupper Seals for Tupperware shown in this advertisement are just a few of the forms covered in this manner and are specifically covered by U.S. Patent #2,487,400.

Only the Tupper Corporation, by U.S.Patent #2,487,400 has the right to make, use and vend container closures in connection with any and all types of containers throughout the United States and its territories as covered by the claims of the Patent.

Tupper Corporation will protect, according to law, the exclusive rights above granted

TUPPER CORPORATION

The Tupper Seal, air and liquid-tight, Pour All cover as a cover for 46 oz. cans; Tupperware Sauce Dishes and other containers of metal, glass or pottery. Foods easily dispensed without removing entire cover.

The Tupperware Wonder Bowls are usually fitted with Tupper Seal, air and liquid-tight covers.

There's a Tupper Seal, air and liquid-tight flexible cover for Tupperware 2, 5, 8 and 12½ oz. Tumblers too, and these Tupper Seal, covers fit many other containers of metal, glass and crockery.

The Tupper Seal, air and liquid-tight flexible Por Top cover, specially designed as a dispensing cover for specified diameters of containers holding foods such as syrups, salad dressings, catsup.

The cover of the Tupperware Bread Server which serves as a bread tray also is designed to give similar results as Tupper Seal, air and liquid-tight Flexible covers. Keeps contents fresh as no other such container.

When equipped with Tupper Seal, air and liquid-tight, flexible covers, Tupperware Cereal Bowls serve many another purpose.

The Tupper Seal, air and liquid-tight flexible cover made for Tupperware 8 oz. Tumblers also fits and is sold with all Tupperware Funnels as a base when funnels are used as storage containers.

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Washington review

With containerboard production running at a record level and with demand slackening off from the post-Korea buying spree, no immediate need is seen for controls on the production of fibre shipping containers.

NPA reports that the rate of paperboard production is 20% higher than in 1950 and estimates that 12,700,000 tons will be produced this year. Containerboard production is expected to be about 6,800,000 tons—an increase of 1,200,000 tons over the 1950 level.

Fall demand, according to the Corrugated and Solid Fibre Shipping Container Industry Advisory Committee, is expected to be heavy. The current easing of demand, stemming from cutbacks in consumer goods, is viewed as a welcome "breather," permitting manufacturers to rebuild seriously depleted inventories.

Demand for V-type, or weatherproof, boxes, used chiefly for military purposes, is said to be increasing. Production during the early months of this year was running well over 20,000 tons a month. So far, manufacturers have been able to meet all requirements for V-board and also provide a preview of capacity to meet any new demands.

New foil restrictions

Control of aluminum foil has been taken out from under NPA Order M-7 and placed under a new order, M-67.

The result puts tight curbs on everything except DO orders and foil used in packaging antibiotics. Foil for bottle-cap liners and other closures is covered in the general order for closures, M-26.

The new foil order, M-67, sets aluminum quotas for various products so that items having a quick rate of turnover receive less aluminum. Protection required—not essentiality of the product—is the determining factor.

Manufacturers of cigarettes, cooked bakery foods, confections, chewing gum and similar items are held to 65% of the average amount by weight used in the last six months of 1950. If the user so desires he can employ thinner foil to make his quota stretch as far as practical.

Products requiring a high degree of protection from light, humidity, etc., are less restricted. Photographic films and supplies and certain foods, including uncooked bakery products, can use 90% of base-period consumption. Drugs affected by water can use 100%.

Under M-67, users are specifically barred from transferring an aluminum foil quota from a non-packaging permitted application to the quota for containers and packaging. Also, a quota cannot be transferred from one product classification to another.

Cellophane

Continued supply of raw materials—notably sulphurs—seems to be the only question mark in cellophane. Production facilities by the end of the year will be 20% greater than ever and direct military needs are only 5% of production. However, NPA has recently pointed out that controls over the distribution of cellophane could become necessary if insufficient quantities of raw materials continue to hamper cellophane output.

Packaging machinery

NPA views the continued production of packaging machinery as vital in the present emergency period. Partial conversion to manufacture of defense goods outside the industry's regular lines is desired now, however, because of Government limitations on civilian production. Only in the event of total war will complete conversion to military production be necessary.

Members of the Industry Advisory Committee have pointed out that cartoning, labeling, wrapping, filling, bottling and other packaging machines are basically "labor-saving equipment." The active manufacture of the machinery is said to be even more necessary in a defense mobilization economy than in a normal economy.

Packaging has quickly turned to changes in packaging materials and methods to conserve manpower and scarce materials. New packaging machines are being produced to reflect these changes, the committee said, and to meet developing military needs.

The committee said that foreign manufacturers are exporting to the United States equipment made with raw materials that are strictly allocated to U. S. producers. The committee registered a complaint that import duties on this packaging machinery were being cut.

Metal cans

A new can order is on the way, probably to have been issued by the time this appears in print. Additional restrictions on the use of tin for containers for non-food items are anticipated and curbs on the use of blackplate will probably appear for the first time. Coffee packers, who have been using blackplate, will be among those deeply concerned if the new order materializes.

Collapsible tubes hit

Members of the Collapsible Tube Industry Advisory Committee regard as severe the recent cutback in allocation of lead for collapsible tubes. Reduction in lead imports, according to NPA, is responsible for the cutback.

Under CMP, the Containers and Packaging Division of NPA will be claimant for the industry for aluminum used in the manufacture of tubes.

Paper shipping sacks

Demand for paper shipping sacks, it is predicted, will rise during the third quarter. This will result from an expected heavier volume of shipments on the part of many users, as well as from continued scarcities of other types of containers.

Spokesmen for the industry believe that the demand can be met by the existing industrial capacity, but point out that inventories throughout the industry are below a reasonable working limit.

NPA reports that the industry's demand for kraft paper has gone up 30% this year. All paper is being produced at a rate of 26 million tons annually and the paper-sack industry is expected to receive a fair share of the supply.

Packaging schools

Establishment of packaging courses to train military and civilian personnel in preservation, packaging and packing of military supplies and equipment has been approved by the Munitions Board.

No registration or tuition fee will be required. The courses will run for two weeks. Inquiries should be addressed to the Munitions Board Packaging Agency, Washington 25, D. C.

Tin for closures

Tin will be available for closures, members of the Toilet Goods Assn. were told during a recent panel discussion on the availability of raw materials. No improvement, however, was foreseen in brass for lipsticks and compacts. Supplies of copper and zinc for manufacture of brass alloy, it is expected, will continue to remain tight.

The NPA advisory committee for the drug and pharmaceutical industry has, meanwhile, recommended that the present 75-day inventory limit on metal closures be changed to make it "a minimum practicable working inventory" limitation. Delays up to six months for deliveries, combined with the present inventory restriction, may bring hardships, committee members pointed out.

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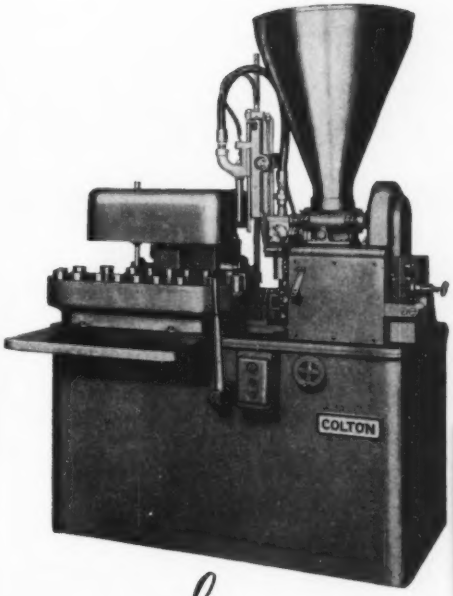

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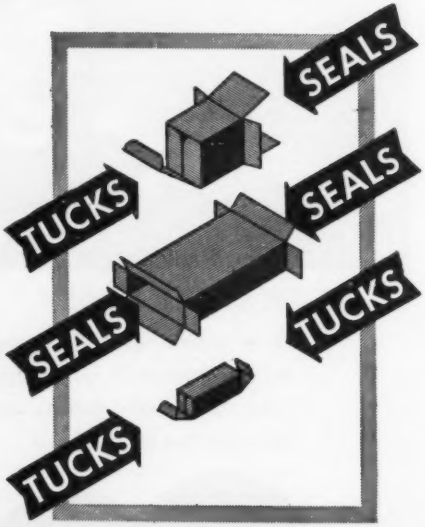

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BARRIER MATERIAL SAMPLES. Booklet containing sample sheets of various specification barrier materials. Each sheet is identified as to specification, composition, heat sealing data, etc. Price list included. The Floyd A. Holes Co. (7-904)

PORTABLE BARRIER MATERIAL SEALER. Information about a portable jaw-type sealer for heat sealing light and heavy duty coated or laminated barrier materials. Packaging Industries, Inc. (7-905)

IMPRINTING MACHINE. Description of the Markem Model 25A machine which is used for carton and box marking, imprinting on parts and products, and variable detail on large labels. Markem Machine Co. (7-906)

FILM SHEETER. Bulletin describing a simple low-cost sheeter for preparing cut-to-size sheets of cellophane and other films. Cleveland Lathe & Machine Co. (7-907)

VIAL FILLING MACHINE. Bulletin and photograph describing the Perfektum automatic Vialfil, Model CF-4, a high speed automatic liquid filler of primary interest to pharmaceutical packagers. Popper & Sons, Inc. (7-908)

EXPORT PACKAGING ADHESIVES. Description of the uses, characteristics, and applications of three adhesives for export packaging which develops excellent resistance to water on drying. Minnesota Mining and Manufacturing Co. (7-909)

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DISPLAY BUYER'S GUIDE. Folder designed to help formulate an opinion about the type of merchandiser needed for a particular application. Illustrates many typical floor and counter displays. River Raisin Paper Co. (7-912)

POLYETHYLENE FOR PAPER COATING. Technical data on the properties and coating methods, manufacture and applications of polyethylene coated papers. Bakelite Div., Union Carbide and Carbon Corp. (7-913)

PRODUCTION LINE HEAT SEALER. Details on the Chaffee Rotor-Sealer for top sealing bags made of Pliofilm, polyethylene, and other heat sealable films. Ralph Chaffee & Co. (7-914)

RESIN-STARCH ADHESIVES. Service bulletin containing data on several resin-starch adhesives for use in the manufacture of solid fibreboard. The Borden Co. (7-915)

ANILINE AND GRAVURE PRESSES. Folder illustrating and describing the features of Halley aniline and rotogravure presses for paper, foil, cellophane, plastics, and similar materials. Marac Machinery Corp. (7-916)

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FOAMED POLYSTYRENE. Bulletin illustrating applications of Krystalite foamed polystyrene plastic in protective packaging, Glo-Brite Products. (7-918)

PACKAGE IMPRINTING. Brochure showing how various manufacturers imprint supplementary package information automatically with the Gottscho Markocoder. Adolph Gottscho, Inc. (7-919)

EXPORT PACKAGING ADHESIVES. Five technical data sheets on UPACO export adhesives, and adhesives recommendations sheet for government specification packaging, and drawings showing how to prepare waterproof case liners. Union Paste Co. (7-920)

LIQUID FILLERS. Bulletin illustrating the features and specifications of MRM fully automatic vacuum or gravity rotary liquid fillers. MRM Company, Inc. (7-921)

POWER COVERING MACHINE AND TOPPER. Data on the Knowlton Universal power covering machine for all sizes of boxes and a foot power topper of the shear type. M. D. Knowlton Co. (7-922)

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PLATFORM SCALE. Specification sheet on a 300 lb. capacity portable type platform scale for floor or low bench use. The Exact Weight Scale Co. (7-930)

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AUTOMATIC WRAPPING MACHINES. Bulletin on the complete Continuous Flow line of packaging machines showing typical styles of packages handled by each. Battle Creek Bread Wrapping Machine Co. (7-932)

METALLIC AND COATED ACETATE. Handy chart showing samples of many metallic colors and transparent tints, chalk and transparent iridescent types and embossing and printing of acetate sheeting. Costing Products. (7-933)

COMPRESSION-CRUSH TESTING MACHINE. Information on the operation and features of a compression-crush testing machine for making standard crush tests of boxboard and compression tests of small containers and drums. National Forge and Ordnance Co. (7-934)

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LOAD-LOK PALLETIZING ADHESIVE. Information on palletizing shipments with Load-lok adhesive which locks assemblies of shipping containers on permanent or disposable pallets. National Adhesives, Div. of National Starch Products, Inc. (7-936)

PAIL PRINTER. Data sheet on a machine designed to print trademarks, government specifications, etc. around the circumference of any open 2, 3, and 5 gallon pail. The Industrial Marking Equipment Co., Inc. (7-937)

PORTABLE BELT BOOSTERS. Two models of the Styl-O-Veyor for conveying packages from one level to another are described in a booklet issued by Island Equipment Corp. (7-938)

ANILINE PRESS. Bulletin containing details of the specifications and performance of the Kidder Master Aniliner for printing in from three to six colors. Kidder Press Co., Inc. (7-939)

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ADHESIVES. Catalog insert containing data on a number of Goodrich industrial adhesives, both air-drying and vulcanizing types, with numerous applications within the packaging industry. B. F. Goodrich Co. (7-943)

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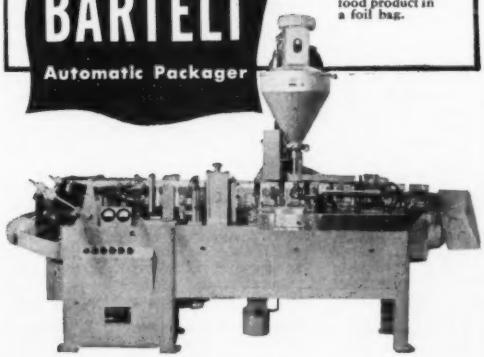

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U. S. patents digest

This digest includes each month the more important patents of interest to those who are concerned with packaging materials. Copies of patents are available from the U. S. Patent Office, Washington, at 25 cents each in currency, money order or certified check; postage stamps are not accepted. **Edited by H. A. Levey**

Collapsible Cellular Partition for Containers, W. C. George (to Gaylord Container Corp., St. Louis, Mo.). U.S. 2,549,799, April 24. A collapsible cellular partition for containers comprising a plurality of superimposed partition strips provided with cross slits and score lines extending from the ends of said slits to the side marginal edges of strips, slits and score lines dividing said strips into a series of cross panels.

Collapsible Container and Cellular Partition Unit, W. C. George (to Gaylord Container Corp., St. Louis, Mo.). U.S. 2,549,800, April 24. A collapsible container and partition unit comprising a container having collapsible side walls and a partition having cooperating collapsible cell-forming strips, partition being interposed between collapsible side walls with its cell-forming strips secured thereto.

Collapsible Container Partition and Liner Unit, W. C. George (to Gaylord Container Corp., St. Louis, Mo.). U.S. 2,549,801, April 24. A collapsible partition-liner unit for a container comprising a plurality of superimposed partition strips and liner members all initially connected together in flat form for movement relative to one another to bring said partition strips into position to form a plurality of cells.

Collapsible Cellular Container Partition, W. C. George and A. P. Klassing (to Gaylord Container Corp., St. Louis, Mo.). U.S. 2,549,802, April 24. A collapsed right-angular partition forming device comprising at least two plate-like members of equal height arranged in faced contacting relation, each member being severed from the top portion to the bottom portion thereof by a like tortuous slit forming a plurality of projections.

Shipping Container for Aircraft Engines, C. E. Johansson (to The Youngstown Steel Door Co., Cleveland, Ohio). U.S. 2,549,906 and 2,549,907, April 24. A shipping container comprising a section embodying a peripheral wall having a closed end and an open end, a plurality of pairs of spaced plate members secured to wall within said section, and a plate spanning and secured to each pair of vertical plate members with flexible mountings carried by said spanning plates.

Bag and Envelope, T. A. Reiss (to Associated Paper Converting Corp., Los Angeles, Calif.). U.S. 2,549,931, April 24. A bag or envelope comprising body panels united at their side and bottom edges, one of said panels being provided with a foldable top-closing flap, a foldable locking tongue carried by flap and aligned openings in said body panels at the top portions thereof.

Package, S. R. Howard (to Pneumatic Scale Corp., Ltd., Quincy, Mass.). U.S. 2,549,970, April 24. A package comprising a sleeve, rectangular in shape and of a stiff material, forming a flapless jacket open at its top and its bottom, a container of transparent flexible material of a height substantially equal to the length of said jacket, container being sealed at one end to provide a bottom closure.

Bag Structure and Process of Manufacture, C. V. Brady and R. J. Williams (to Bemis Bro. Bag Co., St. Louis, Mo.). U.S. 2,550,000, April 24. A method of making a flat bag comprising pasting together flat front and rear walls by means of flat side and flat bottom seams having continuous junctures, spreading the resulting pocket from the inside to form stretched substantially flat sides and a stretched substantially flat closed bottom from which extend flat seams, respectively.

Container, T. T. Logie (to The Stratfield Co., Bridgeport, Conn.). U.S. 2,550,362, April 24. An elongated sheet-metal body consisting of a side wall and edge walls on one side, body having its edge-wall portions along its open side provided transversely with wedge-shaped channels, the body being open through its ends and one side.

Dustproof Box, R. A. Ohlson (to The Trumbull Electric Mfg. Co., Plainville, Conn.). U.S. 2,550,493, April 24. A rectangular sealed box having a body with integral inwardly projecting ledges terminating in upwardly projecting flanges and a cover formed of sheet metal with arched edges seated on said ledges and resilient gaskets mounted on the edges of flanges, cover pressing against said gaskets.

Mechanism for Sealing Cartons, L. Back (to The Interstate Folding Box Co., Middletown, Ohio). U.S. 2,550,516, April 24. In a mechanism for sealing seal-end cartons having body walls and closure flaps, means for engaging erected cartons and for moving said cartons through a path of travel.

Bottle Cap and Brush, D. J. Nardon (to A. Sartorius & Co., Inc., New York, N.Y.). U.S. 2,550,586, April 24. A bottle having an externally threaded neck, the upper surface of bottle neck having an inner horizontal plane surface bordered by a frusto-conical surface, resilient flat sealing disk seated on inner horizontal plane, and a brush disposed with the bottle, brush being supported by said disk.

Feed Drive for Packaging Machines, C. S. Stephano (to Stephano Bros., Philadelphia, Pa.). U.S. 2,550,616, April 24. In feeding mechanism for cigarette packaging machines, the combination which comprises a pair of feed screws drivingly interconnected one with the other, means for depositing articles to be packaged between the threads of screws.

Integral Hinge for Containers, G. E. Eckman (to American Can Co., New York, N.Y.). U.S. 2,551,587, May 8. A sheet-metal container comprising a tubular body terminating at its open end in a depending hem provided with an integral elongated tubular bead having spaced compressed portions of reduced diameter thereon constituting wireless hinge pintles, and a container cover having a flange provided with spaced curved hinge lugs.

Container, W. W. Maher (to American Can Co., New York, N.Y.). U.S. 2,551,615, May 8. A sheet-metal container having a body side seam and a hermetically sealed crimped end-seam joint, comprising a can body having a straight end-wall portion surrounding the mouth of the container.

Container, F. L. Rushing and B. M. Williams (to Gaylord Container Corp., St. Louis, Mo.). U.S. 2,551,814, May 8. A carton comprising a body and a slip cover therefor, body including a bottom panel, side-wall panels with inturned end flaps that are overlapped and extend from side-wall panel to side-wall panel, end-wall panels having upper marginal flaps that are bent over the upper edges of overlapped end flaps.

Vacuum Seal Finish and Closure for Jars, W. Gallagher (to Knox Glass Associates, Inc., Knox, Pa.). U.S. 2,551,937, May 8. In combination with a jar having an inner finish wall terminating in a ledge, of a closure comprising a sheet-metal cap having a central depression forming a vertical wall complementary to the finish wall and having its outer edge folded to constitute a double radial flange, a rubber sealing ring having straight parallel walls disposed around the vertical wall of the cap and held in crimping relation by the folded edge of the double flange to constitute the cap and ring a pre-assembled unitary closure.

Paper Carton Machine, C. T. Walter and H. E. Haase (to Swift & Co., a corporation of Illinois). U.S. 2,552,127, May 8. A capper having in combination a means to produce a relative motion between a cap and a body, a means to deliver a deformable skirted cap during such relative motion into position with respect to said body.

Merchandise Container Having Opening Means, G. A. Moore (to Reynolds Metals Co., Richmond, Va.). U.S. 2,552,340, May 8. A container formed of sheet material of more or less rectangular shape comprising bottom and side panels and folded and sealed end closures.

Bottle Holder and Carrier, G. M. Acton (to Acton Mfg. Co., Inc., Arkansas City, Kans.). U.S. 2,552,361, May 8. A bottle holder and carrier including a bottom, end members on said bottom and extending upwardly therefrom, spaced side members having portions overlying end members and forming a peripheral wall.

Frozen-Food Container, L. R. Inwood, Kansas City, Mo. U.S. 2,550,815, May 1. A container comprising a lower section having a flat bottom wall and a continuous annular side wall extending upwardly and outwardly from the periphery

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U.S. patents digest

of bottom wall and having a continuous outwardly extending shelf on the outermost edge of side wall in parallelism with the bottom wall.

Collapsible Box, A. M. Lewis and P. B. Weiler, Detroit, Mich. U.S. 2,550,830, May 1. A collapsible box comprising: a bottom; a pair of oppositely disposed side walls, each hingedly connected at lower edge to opposite sides of bottom; a wire frame having oppositely disposed sides and oppositely disposed end walls hingedly connected at their lower edges and foldable inwardly.

Wrapping Machinery, J. A. Gilbert (to Rose Bros. (Gainsborough) Limited, Gainsborough, England). U.S. 2,550,920, May 1. A machine for wrapping razor blades or like articles, comprising a cylindrical supporting column, an intermittently rotatable suction transfer member rotatably mounted on column and slidable thereon in axial directions, transfer member being formed with at least two feeding members provided with suction passages and each adapted in turn to seize an article by suction.

Article-Controlled Adjustment for Packaging Apparatus, J. A. Kay (to Rose Bros. (Gainsborough) Limited, Gainsborough, England). U.S. 2,550,928, May 1. Packaging apparatus comprising adjustable mechanism for accommodating articles of different height and width, a device for controlling the movement of the adjustable mechanism, device including a pair of movable controlling members for controlling the movement of the adjustable mechanism in regard to height and width.

Knocked-Down or Folding Structure Made from Acetate Sheeting or the Like, R. M. Bergstein (to Robert Morris Bergstein and Frank David Bergstein, trustees). U.S. 2,551,090, May 1. A knockdown container having at least one element of paperboard and another element of a plurality of panels of transparent, plastic, non-scorable sheeting.

Filling Machine, L. McGihon (to King Sales & Engineering Co., San Francisco, Calif.). U.S. 2,551,033, May 1. In a filling machine, a filling station, means for presenting container successively to filling station, including a support for a container.

Reinforced Knock-down Box, W. A. Ringler (to The Gardner Board & Carton Co., a corporation of Ohio). U.S. 2,551,164, May 1. In combination in a box, a blank comprising a main panel, end and side walls articulated to edges of main panel, bellows-folding webs connecting ends of the end and side walls, respectively.

Adhesive-Tape Applicator, B. A. Rosen, Baltimore, Md. U.S. 2,551,168, May 1. A tape-applying device comprising a casing housing a roll of adhesive tape and provided with an opening through which the tape is dispensed.

Dispensing Closure, J. M. Wheaton (to Owens-Illinois Glass Co., a corporation of

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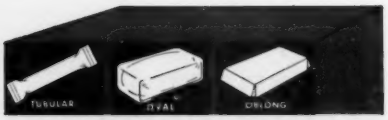

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Ohio). U.S. 2,551,203, May 1. A container having a continuous wall defining a filling opening and an annular external shoulder in close proximity to opening with sifter-type closure for said opening.

Carton-Forming Machine, L. Veyret and F. Feffroy (to La Cellophane, Paris, France). U.S. 2,551,186, May 1. An apparatus for forming folded open-top cartons which are tight to a predetermined level from flat rectangular blanks.

Soft-Drink Bottle Carrier, C. S. Glenny (to The Washburn Co., Worcester, Mass.). U.S. 2,551,262, May 1. A bottle carrier comprising a one-piece rigid rectangular top frame, a bottom member and rectangular side members connected at their upper and lower ends to the top frame and bottom member, respectively, with a handle bail member attached.

Banding Machine, J. J. Prochaska (to Swift & Co., Chicago, Ill.). U.S. 2,551,288, May 1. A machine for assembling bands snugly on products such as frankfurters and the like, and affixing them thereto, comprising means to supply a strip of banding material into a position to have products laid in serial relation over it.

Container, R. T. Frieders and J. P. Strange, Jr. (to John Strange Pail Co., Menasha, Wis.). U.S. 2,551,324, May 1. A container formed from paperboard material comprising a box part having front, rear and end-wall panels and a cover part for box part having top, front and end-wall panels, cover part being adapted to telescope over box part to bring the front-wall panels of the box part and the cover part into juxtaposed relation.

Transfer Means for Thermoplastic Caps, Having Means to Heat Said Caps During Transfer, E. Vantlander (to American Seal-Kap Corp. of Delaware, Wilmington, Del.). U.S. 2,551,476, May 1. The combination of a downwardly inclined reservoir adapted to hold a stack of inverted nested caps having a thermoplastic adhesive applied to the skirts thereof, a heating chamber in which the caps are heated until the thermoplastic adhesive thereon becomes soft and tacky in condition for sealing the caps over and about the mouth and pouring lips of bottles.

Capping Machine with Cap-Heating and Cap-Transfer Means, H. G. Vore (to American Seal-Kap Corp. of Delaware, Wilmington, Del.). U.S. 2,551,477, May 1. The combination of a reservoir adapted to hold a stack of hood caps having pleated skirts with a band of thermoplastic adhesive applied thereto and a heating chamber disposed in axial alignment with said reservoir.

Apparatus for Closing and Sealing Containers, R. B. Cartwright and W. M. Owen (said Owen to Cartwright). U.S. 2,551,527, May 1. Apparatus for folding down the flaps of the walls of a paper container, including a mounted plate free to be shifted in its own plane and having spaced extensions projecting from an edge thereof.

Bottle Carrier, C. L. Gilbert (to Owens-Illinois Glass Co., a corporation of Ohio). U.S. 2,551,559, May 1. A carrier formed from a blank of foldable sheet material, carrier being expansible from a folded to an expanded form, blank in folded form comprising a rectangular bottom folded along a median line, side panels united to bottom along longitudinal fold lines, handle-forming strips united to the end and side panels extending lengthwise.

Plug Button or Closure, P. D. Becker (to United-Carr Fastener Corp., Cambridge, Mass.). U.S. 2,552,916, 917, 918 and 919, May 15. A plug button or closure adapted for attachment to an apertured support comprising a continuous annular member with circumferentially spaced struts extending angularly from said member.

Container Feeding Mechanism for Capping Machines, E. M. Fore, Solfo Springs, Fla. U.S. 2,552,950 May 15. A container capping machine including a capping head, a vertically reciprocable container support movable upwardly to a raised position to present the container to the capping head.

Label-Affixing Machine, V. Lobasso, New York. U.S. 2,553,056 and 057, May 15. In a label-affixing machine, means for applying labels circumferentially about the body of an article.

Dispensing Package, R. H. Van Sant, Alexandria, Va. U.S. 2,553,071, May 15. A package comprising a plurality of similarly formed capsules containing medicants and a single holder for said capsules, each capsule having a reduced end simulating a teat provided with a frangible end portion.

Apparatus for Filling Containers with Ice Cream or the Like, F. C. Gross (to Package Machinery Co., Springfield, Mass.). U.S. 2,553,250, May 15. Packaging apparatus comprising a pair of conveyors for propelling containers to and from predetermined filling positions.

Bottle-Handling Apparatus, N. J. Hyatt, Williamsville, N.Y. U.S. 2,553,373, May 15. In a machine for gripping successive rows of bottles and lifting them out of containers and depositing them upon a horizontally moving conveyor, a lifting head member mounting a plurality of bottle neck gripping elements.

Article Isolating Shipping Container, G. Loth (to The Hinde & Dauch Paper Co., Sandusky, Ohio). U.S. 2,553,418, May 15. The combination with a shipping container having end walls and enclosing walls connecting the end walls and angularly disposed with respect to one another, of a pair of article-isolating buffers, one adjacent each end wall, each buffer comprising a partition member shaped to fit within said enclosing walls.

Sealing Member for Filling Machine, P. R. Fechheimer (to The Karl Kiefer Machine Co., Cincinnati, Ohio). U.S. 2,553,447, May 15. A unitary sealing member for filling machine comprising a hollow spherical body terminating at its lower extremity in a broad annulus, the lower surface of which constitutes a sealing surface for contact with the upper lip surface of a bottle.

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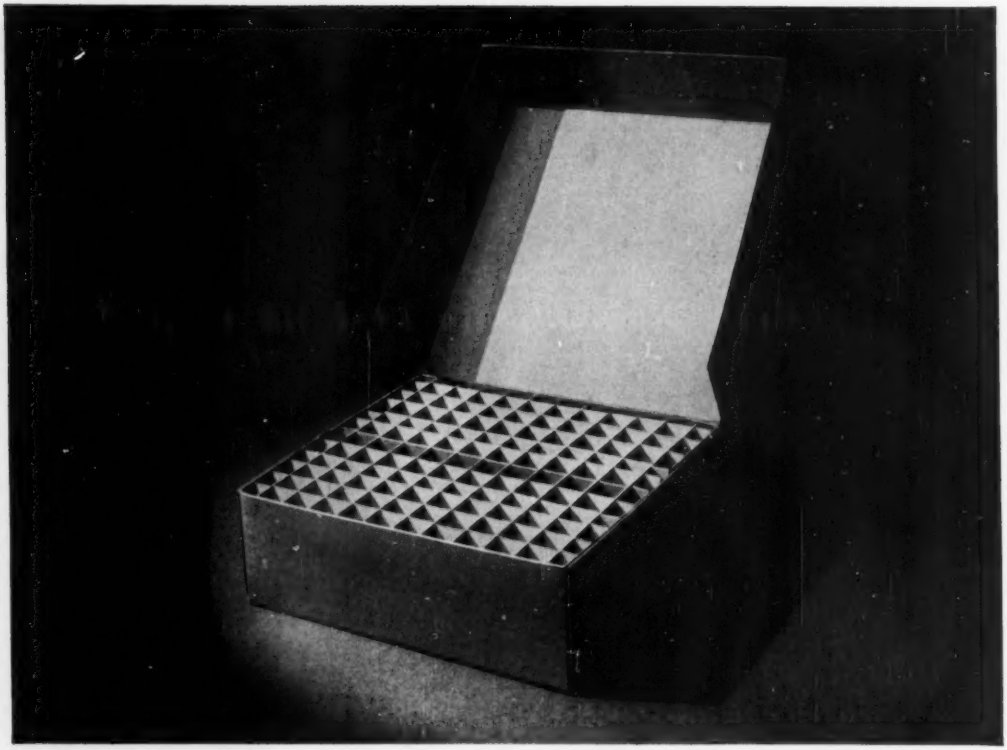

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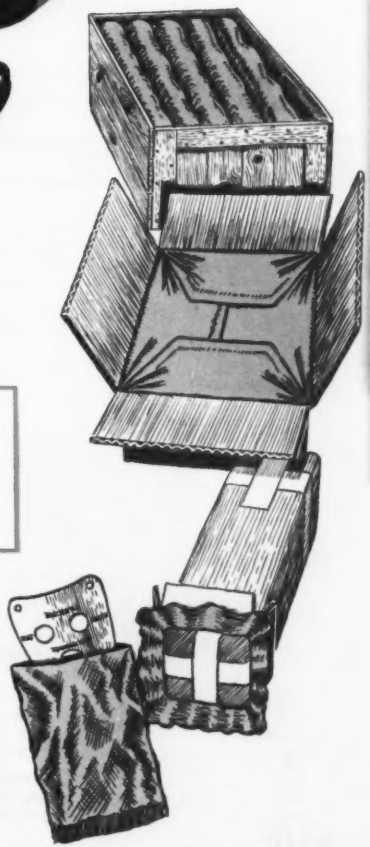

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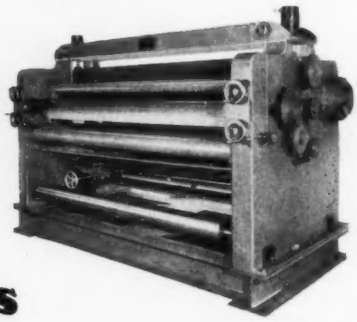

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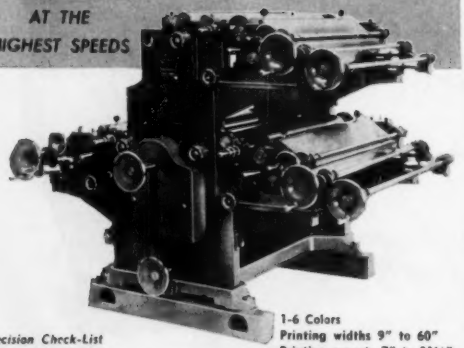

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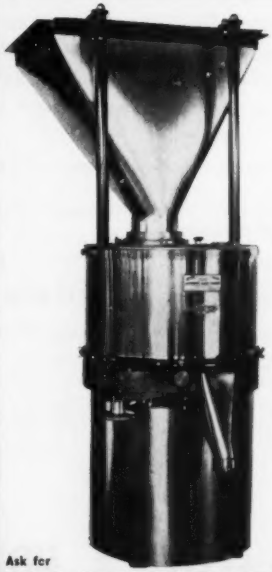

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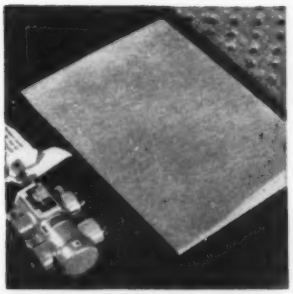

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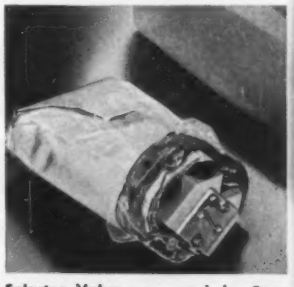

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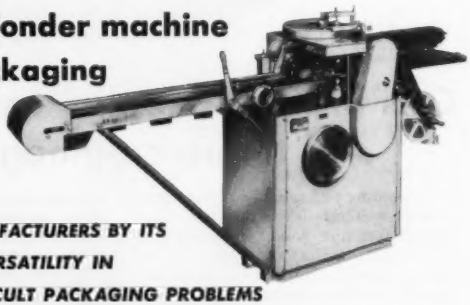

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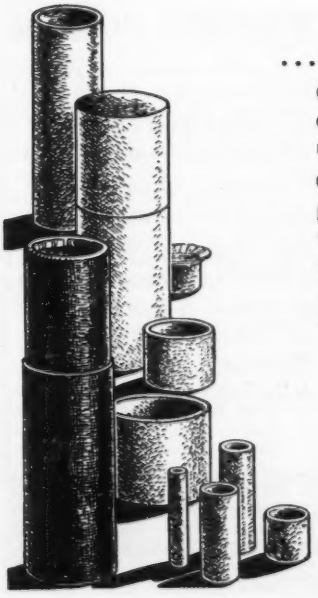

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Award winners in Canadian art students' competition

Canada's growing interest in the field of packaging is evidenced by the recent package design competition sponsored by the Canadian Package Design Committee. The competition was open to all art-school students of Canada and its purpose was to foster the development of original creative package and label design among the Canadian students.

Grand award winner was Bruce Walker of Toronto, a student of the Ontario College of Art, whose first-place entry in design of folding cartons for a related line of pharmaceutical products won a special mention. Mr. Walker also received the medallion award of *Canadian Packaging* magazine for the Best Package Design.

More than 75 entries were submitted. Awards totaling $1,450 were presented to 12 students from Montreal, Toronto and Winnipeg who won first, second and third-place awards in the committee's first national competition in package and label design.

The winning packages, all of which are illustrated below, show the fresh approach and the originality of conception exhibited by the students—from the modern yet ethical appearance of the pharmaceutical cartons to the humorous and appealing designs of the candy boxes.

Projects were four in number: label and closure for bottle of soda water, label for can of apple juice, folding cartons for a group of three pharmaceutical products and surface design for box of candies. Students of the Ontario College of Art won nine out of a possible 12 prizes.

First, second and third prize winners in the soda-water bottle classification, in that order, were Edward Lillepold; School of Art & Design, Montreal Museum of Fine Arts; Victor Sinclair and Dorothy R. Burnham, both of the Ontario College of Art, Toronto.

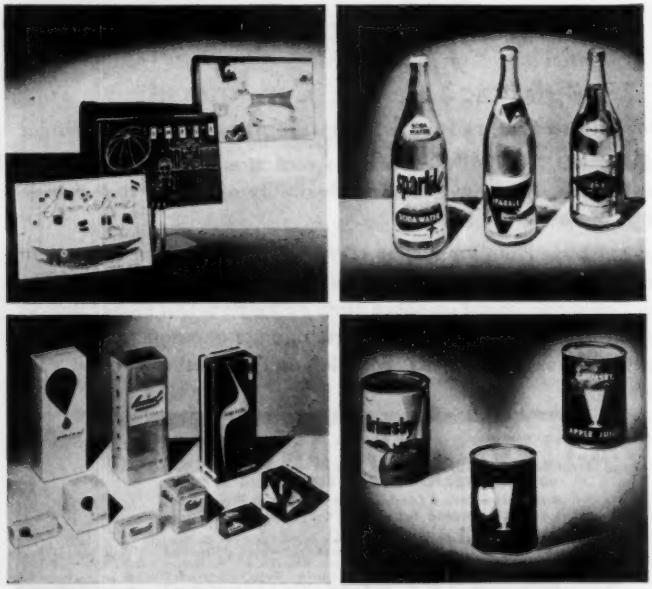
In the apple-juice can category, first, second and third prizes went, respectively, to George Gingras, William Bowers and Raymond G. Taylor, all of the Ontario College of Art.

For the candy-box design, first, second and third awards went, respectively, to Edward Evans, James Rodgers (both of the University of Manitoba School of Art, Winnipeg) and Mas Ikeno of the Ontario College of Art.

Bruce Walker, whose design won the grand award, also won first prize in the pharmaceutical-products classification, while Don Haws and Anne Thomson, both of the Ontario College of Art, won second and third prizes, respectively.

All of the first-prize winners received awards of $200. Second-prize winners received $100, while the third-place winners were awarded $50 each. The grand-award winner received $250. Each prize-winning student also received a certificate from the Canadian Package Design Committee. Presentation of the awards took place during a luncheon at the annual meeting of the sponsoring group last month in Toronto.

The panel of judges who selected the award winners included Mrs. Byrne Hope Sanders, editor, Chatelaine; Spalding Black, Canadian Industries, Ltd., Montreal; Carl Mangold, industrial designer, Montreal; George Englesmith, School of Architecture, University of Toronto; Clair Stewart, chairman of the Canadian Package Design Committee and art director of Rolph-Clark-Stone, Ltd., Toronto.



WINNING DESIGNS by art students in each of the four groups of the competition sponsored by the Canadian Package Design Committee. First, second and third-place winners are shown left to right in each case. Grand award went to pharmaceutical cartons, lower photograph, far left.

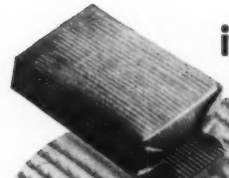
Electronic sterilizing

(*This article continued from page* 106)
high electron dose 40 gross pounds per hour. The larger units will do 80, 500 and 2,400 gross pounds of completely irradiated material per hour.

Although the full potentialities of this new field are still relatively unexplored, it is already clear that high-energy electrons are destined to become a significant factor in the processing of many important sterile materials.

Bibliography

1. "Irradiation of Biological Materials by High Energy Roentgen Rays and Cathode Rays," Trump and Van de Graaff, *Journal of Applied Physics*, 19, No. 7, 599-604, July, 1948.
2. "Biological and Photo-Chemical Effects of High Energy, Electrostatically Produced Roentgen Rays and Cathode Rays," Dunn, Campbell, et al, *Journal of Applied Physics*, 19, No. 7, 605-616, July, 1948.



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Dry milk: problem child

(*This article continued from page* 75) this type package is its effective reclosure.

The Milac label, printed in red, cream and blue, points out in prominent type that the powder makes 3½ qts. of fluid skim milk. The back panel of the label contains directions for use, a measurement table and related information. An unusual feature of the label is the fact that recipes are printed on the inner surface of the label, which may be cut along a designated line and removed.

A composite can with crimped-on, cut-off-type top is employed by Dried Milk Products Cooperative, Eau Claire, Wis., for its Wisota brand non-fat dry-milk solids. The paper label for this brand has nine recipes on the back panel, along with instructions on reliquefying the product.

For its Celesto brand non-fat milk powder, North Star Dairy, St. Paul, Minn., employs a 3½-oz. metal container with paper label—a type and size of package rarely seen for this product. The can is approximately the same size as those used for frozen orange juice concentrates and is opened the same way—with a can opener. The printed label, a colorful red, white and blue, pictures a quart bottle of milk on the front panel, emphasizing the fact that the can holds the exact amount of powder required to make 1 qt. of non-fat fluid milk. The back panel of the label includes use instructions and product data.

Unit packages of dry-milk products are playing an important part in military rations. Specifications on products of this type—sweetened modified dry milk, coffee, tea, bouillon and others—call for the use of an acetate-aluminum foil lamination. Such materials, provided with a heat-seal inner coating, are handled in roll form at high speed on automatic equipment (Transwrap, Stokeswrap, Dismat, Bartelt, etc.). This type of unit package gives effective protection against moisture penetration, readily identifies the product by means of the directly printed label and easily withstands all normal handling operations.

The possibility of a nitrogen pack with units of this kind is now being investigated by at least one machinery manufacturer and is said to be of great interest to the military, although such packs have not yet been approved for procurement. The advantage of the nitrogen pack, as with similar packs in metal containers, would be the reduction in oxygen content within the package and improved keeping quality for dry-milk products containing fat.

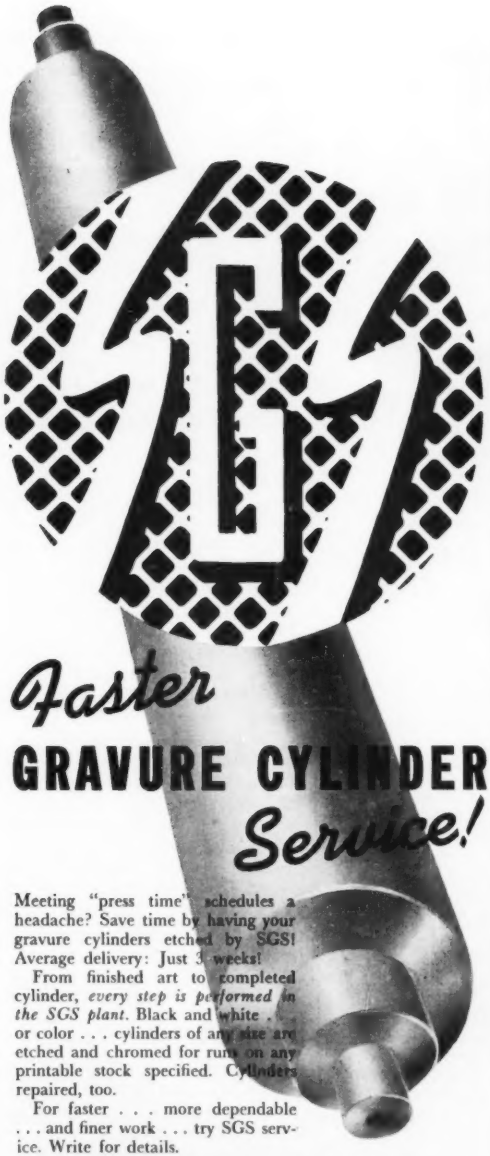
QM packaging—1951

(*This article continued from page* 65) into a seat in fighter-type planes. A waterproof polyethylene bag, to be used for storing uneaten portions, is among the components of this packet.

Experimental work on canned and foil-wrapped bread, precooked frozen foods and recombined, reconstituted milk emphasize the broad field of activities covered by the Quartermaster Food and Container Institute. Many problems have been solved, but many more remain on the Institute's schedule, such as the development of a satisfactory package (other than glass) which will withstand the corrosive action of powdered vinegar.

The Institute also wants more information on limitations of size, materials, etc., of automatic packaging equipment and on the shelf life of packaged foods under military storage conditions. It is pointed out that there is a lack of correlation between accelerated storage data and that obtained under actual storage conditions.

Because of the diversity and complexity of its activities, the Food and Container Institute cooperates closely with educational institutions and various industrial organizations. Out of the cooperation between the Institute and industry during World War II grew the Associates, Food and Container Institute, a voluntary, nonprofit organization formed in 1947. Through the Associates, contact among Government, colleges, universities and industry at the technical level has been greatly facilitated. According to Col. Rohland A. Isker, wartime commandant of the Institute and now secretary of the Associates, the group now has over 250 industrial and 175 institutional members.



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This little pig will go to market. And then a number of his most succulent "subdivisions" will be packaged in Rhinelander G&G*—exactly right for protecting his fat and porky goodness.

Tea for two—and it's true that few packaging materials can resist odor "pass-through" so well as Glassine. That's why this good paper is so often used to guard the delicate aroma of tea against foreign odors that lurk everywhere.

*Glassine and Greaseproof—the functional papers that do so many tough jobs well.

IN THE LAND O' LAKES • RHINELANDER, WISCONSIN

Grand Award winner

The set-up box that contest judges had previously selected as the best example of a display box (see MODERN PACKAGING, June, 1951, p. 105) also

won the Grand Award in the 1951 Set-Up Paper Box Competition by vote of the 520 members attending the 33rd Annual Convention of the National Paper Box Mfrs. Assn. in Atlantic City last month.

The Shower-Gift Box used by Ideal Baby Shoe Co. of Danvers, Mass., produced by the Friend Box Co., also of Danvers, was chosen for its unusual incentive to impulse buying, excellent display of contents and connotation of quality.

The box, which outwardly appears to be a conventional shoe box, is constructed with a drop front and hinged lid with ribbon holder. Two pairs of baby shoes, of slightly different styles, appear side by side in the box and, in the lid, tucked into a decorative opening, are a moire sachet bag containing socks and a "With Best Wishes" card suggesting the appropriateness of the item for a baby shower gift.

Six-pack carrier

The six-pack type of carrier helps to promote beer sales by reaching an important segment in the home-consumption market since it completes the pattern of satisfying big buyers as well as stepping up the purchase-unit sale of two-, three- or four-bottle buyers. This is one of the conclusions drawn from a survey which was made for Owens-Illinois Glass Co., of 1,049 families throughout the country who buy beer for home consumption. Women make 36% of the purchases, nine out of 10 buying at the retail food store, it was found, and nearly half of these women preferred the six-pack carrier because of its convenience.

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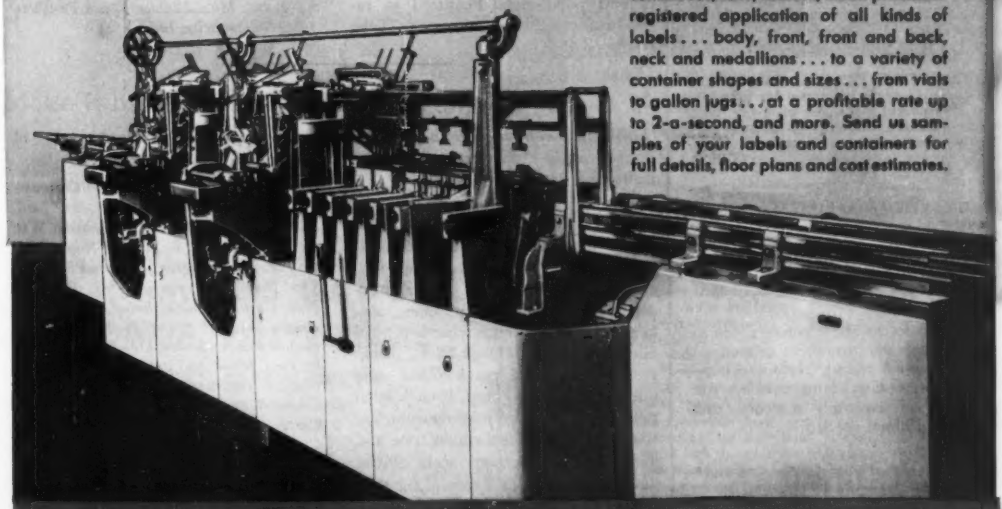

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EXPORT PACKAGING ADHESIVES. Five technical data sheets on UPACO export adhesives, and adhesives recommendation sheet for government specification packaging and drawings showing how to prepare waterproof case liners. Union Paste Co. **(7-920)**

FABRICATING PLASTIC PACKAGES. Brochure showing machines for fabricating transparent packages of every type and containing a number of unusual suggested designs. Taber Instrument Corp. **(7-925)**

AUTOMATIC WRAPPING MACHINES. Bulletin on the complete Continuous Flow line of packaging machines showing typical styles of packages handled by each. Battle Creek Bread Wrapping Machine Co. **(7-932)**

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A BRESKIN PUBLICATION

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Window with a shade

(*This article continued from page* 67)
Hormel package. Due to the construction of the package, a variation of as much as ½ in. in the placement of the shingled slices will cause no difficulty in the packaging operation.

After leaving the automatic slicing machine, which deposits them on transfer sheets, the shingled slices move via conveyor to the packaging stations. Each operator deposits the required number of slices in the opened package by inverting the transfer sheet. After the proper amount of bacon has been placed in the opened package, as determined by check weighing, the inner greaseproof wrap is rapidly folded down in a two-handed operation and closure of the package lock is effected by a simple twisting motion. As soon as the tab enters an angled slit on the inner flap of the package, a secure lock is obtained by engagement of a slit in the tab itself.

For its initial introduction of the new package in the Los Angeles area, the Hormel organization pulled out all the promotional stops, staging "Hormel Week" in Pomona, a city of 35,000 population. Featured in radio broadcasts was a new song, "Take Ramona to Pomona," which was written by the originator of the package in collaboration with a West Coast musician.

When exhibited at the recent NIMPA meat packers' meeting in Chicago, the new Hormel package aroused wide interest, not only for bacon, but also for possible use in connection with such items as dried beef, boiled ham and sliced luncheon meats. One feature of special interest to packers is the fact that although the product can be seen, the new optional visibility package placed the principal sales emphasis on brand name and selling message instead of the visual appeal of the bacon itself.

Although Hormel is the first packer to adopt the new package, it is expected to be made available to other packers as production facilities are increased.

CREDITS: *Hormel packages, Mullinix Packaging Div., Western Waxed Paper Co., Los Angeles, Calif. (Other sources of supply: Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich; Central Waxed Paper Co., Chicago; Waxide Paper Co., St. Louis, Mo.; Zimmer Paper Products, Inc., Indianapolis, Ind.)*

Birds Eye Frosted Foods

(*This article continued from page* 81)
pressed against the cartons to freeze in freshness and flavor.

Among the products bearing the Birds Eye label are asparagus, green beans, lima beans, broccoli, Brussels sprouts, cauliflower, corn, mixed vegetables, peas, peas and carrots, spinach, squash, succotash, peaches, raspberries, rhubarb, strawberries, cod fillets, flounder, haddock fillets, mackerel fillets, ocean perch fillets, sole fillets, chicken a la king, French fried potatoes and orange juice concentrate. Recently tomato juice concentrate and lemonade concentrate were introduced. Each year, it seems, a new frosted food is in the limelight.

Birds Eye is still the largest single factor in the business and since the first year has increased its tonnage production by 3,142%. Its pioneer contribution, through the package, to the building of a whole new industry is revealed even more clearly when it is known that Birds Eye today—despite its unrivaled size and scope—accounts for only about 18% of the total frozen-food tonnage.

CREDITS (current packages): ***Cartons***—*Waldorf Paper Products Co., St. Paul, Minn., and Marathon Corp., Menasha, Wis.* ***Cellophane***—*E. I. du Pont de Nemours & Co., Inc., Wilmington, Del., and Sylvania Div., American Viscose Corp., Philadelphia.* ***Carton-forming, lining, closing machines***—*Waldorf Paper Products Co., in conjunction with Midway Machine Co., St. Paul, Minn., and Peters Machinery Co., Chicago.* ***Overwraps***—*Marathon Corp. and Pacific Waxed Paper Co., Seattle, Wash.* ***Carton-filling machines***—*Chisholm-Ryder Co. of Niagara Falls, N. Y.* ***Overwrapping machines***—*Battle Creek Bread Wrapping Machine Co., Battle Creek, Mich.; Package Machinery Co., Springfield, Mass.; Hayssen Mfg. Co., Sheyboygan, Wis.; Scandia Mfg. Co., North Arlington, N. J.; and The Globe Co., Chicago.* ***Composite cans***—*American Can Co., New York.* ***Composite-can filling machines***—*Elgin Mfg. Co., Elgin, Ill.* ***Metal cans***—*American Can Co. and Continental Can Co., New York.* ***Can-filling machines***—*The Pfaudler Co., Rochester, N. Y.* ***Designs***—*Frank Gianninoto & Associates, New York.*

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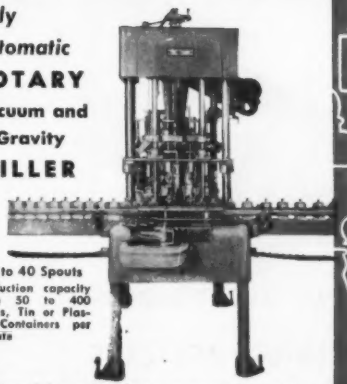

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MACHINE CO.
55 CARBON ST.
BRIDGEPORT, CT.

Precipitation coating

(*This article continued from page* 109)

ing procedures evaporate the remainder of the water.

When low coating weights are applied on a board machine to a rawstock that has been overdried prior to calender water-box finishing, the moisture in the coating could equalize the low moisture content of the rawstock, and the sheet, after passing through the machine calender, would require no extra drying.

The amount of hydroxyethyl cellulose required for complete greaseproofing depends, of course, on the smoothness of the surface to which it is applied. On smooth surfaces, as little as 1 lb. per 1,000 sq. ft. has been sufficient. On very rough board, as high as 2½ lb. per 1,000 sq. ft. is necessary. A good average for board in general would be 1.3 lb. per 1,000 sq. ft. These figures are for transparent unpigmented coatings; the coating weights must be higher if pigment is added.

Completely greaseproof coatings have been made using one part of hydroxyethyl cellulose to two parts of titanium dioxide or other pigments. This coating will cover a board of average smoothness at 3 to 4 lbs. per 1,000 sq. ft. and completely opaque a news liner, bringing it up to a brightness of 80.

Where the coating must be moistureproof and water resisting as well as grease and oil resisting, a thin coat of suitable resin or plastic must be coated over the HEC coating. This material may be applied from an organic solvent or from an emulsion or dispersion vehicle. If this coating has both oil- and water-resistant qualities, it is not necessary to have complete greaseproof qualities in the HEC undercoat.

Therefore, fairly high pigmentation of the HEC coating with clay or other pigments is acceptable. In this case, just enough HEC is used to give the solvent resistance necessary to keep the lacquer or moistureproof coating on top and prevent it from sinking into the sheet. Spirit varnishes and lacquers stay well on the surface with HEC coating contents as low as 7% and do not transparentize the 93% clay in this system to any substantial degree. Much lower amounts of lacquers, emulsions or dispersions are needed over this coating to form a continuous film than on rawstock or on stock coated by normal methods and standard adhesives.

Printing on the unpigmented film is much the same as printing on cellophane. Aniline and gravure printing is excellent. Letterpress inks must be specially formulated.

The pigmented coatings that are to be overprinted or lacquered for moisture resistance print extremely well on all types of presses. Solvent-type inks set almost instantly upon contact with the coating. Their rub resistance is much better than on a conventional coated sheet.

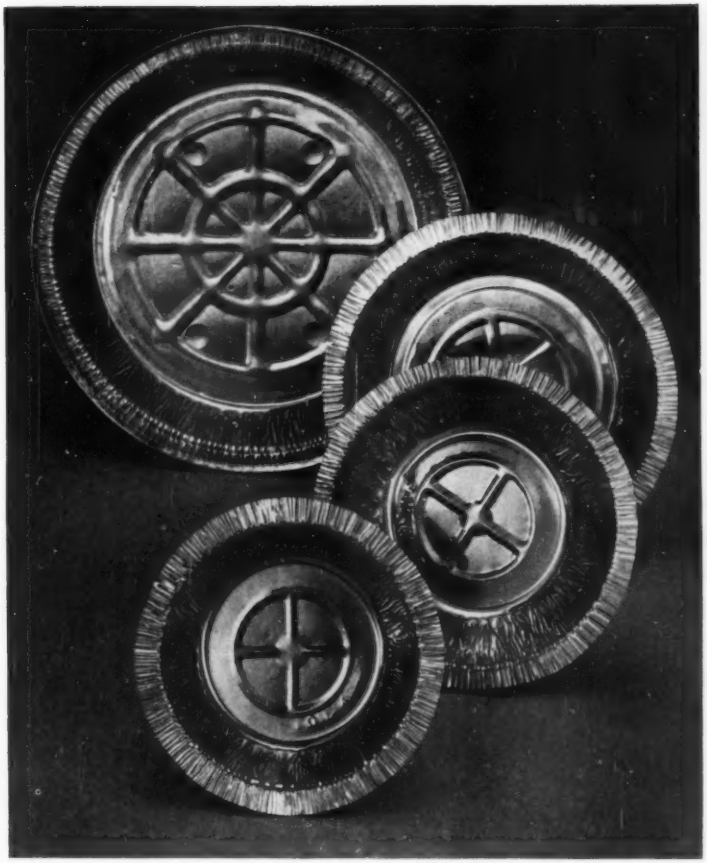
Gluing of the greaseproof surface requires some changes in glue formulation, as the adhesion can no longer be a mechanical one depending on surrounding rough fibres. Many synthetic adhesives, however, do a very good job and can be adjusted for fast or slow dry. Heat-sealing adhesives can also be used.

Summary

The principle of precipitating a continuous film on the surface of board or paper—rather than allowing the coating to sink in and the fibres to wick through the coating—seems to be an advance in the right direction. The reaction of changing the coating solution to a solid, non-tacky film is extremely fast and no excessive heats are required which might deleteriously affect the paper. Costs should prove to be much lower than by present-day coating and laminating methods.

Pre-packaged cherries

A comparison of costs for pre-packaging fresh cherries in consumer-sized packages, issued by the Production & Marketing Administration, Dept. of Agriculture in a progress report of a study on this subject, shows that total cost of pre-packaging cherries in transparent film bags (packaging materials, shipping containers, labor and precooling) amounted to 56 cents for the equivalent of the conventional 15-lb., double-row, faced box which cost 86 cents. The cost on three other types of packages used in the study was given as follows: window cartons, 97 cents; plastic baskets, $1.36 and over-wrapped trays, $1.72.



FOOD CONTAINERS MANUFACTURED BY FOIL KRAFT, LOS ANGELES

Star Salesmen

Because of disposable plates like these, made of Kaiser Aluminum Foil, bakers get all these sales advantages:

BETTER CRUSTS AND FILLINGS—because the foil plate conducts heat evenly and rapidly during baking.

FLAVOR PROTECTION—Foil imparts no flavor . . . and less grease is required. No absorption as with paper plates.

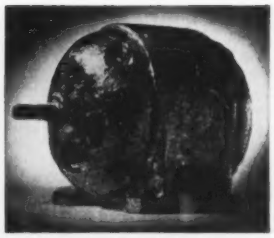
EXTRA DISPLAY APPEAL—Plates of Kaiser Aluminum Foil look *more attractive* . . . step up pie sales.

EFFICIENCY AND ECONOMY—No washing, wiping or inspection necessary, as with heavy-duty plates. No refunds, no returns, no breakage. No transfer to paper plates necessary.

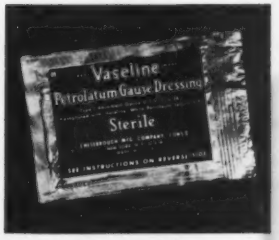
Some of *your* customers can profit from these advantages. Call us now and we'll gladly work with you. Sales offices in principal cities. Kaiser Aluminum & Chemical Sales, Inc., Oakland, California.

Kaiser Aluminum

Setting the pace . . . through quality and service



PREVENTS DAMAGE—Machinery or tools wrapped in Kaiser Aluminum Foil are assured complete protection against moisture, corrosion and other damaging elements.



MORE PROTECTION! This soothing dressing is kept dependably sterile by the Kaiser Aluminum Foil envelope, which is non-porous, vapor-tight, moisture proof. Advantages that can be applied to many products!

HEALTH SAFEGUARD! No germ-carrying dirt, no soiled hands contaminated this milk. The pouring lip is protected by a hood made from Kaiser Aluminum Foil. An idea *every* milk company should adopt!

MORE SALES! Printed on Kaiser Aluminum Foil, three beer labels distinguish famous Miller's High Life beer. Remember this sales-builder for the future!

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EVENFLO
engraved rolls

—FOR CONSISTENTLY GOOD COVERAGE WITH

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WAXES
PLASTICS
LACQUERS
HOT MELTS
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ANILINE INKS

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The answer to your problems involving the application of fluids. Evenflo engraved rolls apply your ink or coatings in the correct amount, continuously and automatically. No time-consuming adjustments are required and materials are conserved because of fewer rejects due to faulty application. Evenflo Engraved Rolls can improve your press-work and step up the efficiency of your coating operations by assuring uniform coverage.

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PAMARCO { EVENFLO ENGRAVED ROLLERS / NO-FLEX PLATE ROLLS

PAPER MACHINERY & RESEARCH • INC
1014 OAK STREET • ROSELLE, NEW JERSEY

Quick Quiz

FOR PACKAGING MEN

Q. Which packaging magazine provides the greatest amount of helpful editorial material and how-to-do-it information for its subscribers?

A. An actual page-by-page count reveals that for all twelve issues in 1950, MODERN PACKAGING provided far more data to its readers than any of the other four publications in the packaging field.

Specifically, MODERN PACKAGING gave 70% more pages than the second magazine, 127% more than the third, 150% more than the fourth and 214% more than the fifth!

Q. Which magazine is the first choice of packaging advertisers?

A. Judged by the votes of the men who should know best—the companies and advertising agencies who back their opinions with actual advertising appropriations—MODERN PACKAGING is far and away the field's most powerful and influential medium.

In 1950, MODERN PACKAGING carried the advertising of 82% more advertisers than the second magazine, 361% more advertisers than the third, 373% more advertisers than the fourth and 419% more advertisers than the fifth.

And in this same twelve-month period, 181 companies—almost half of all its advertisers—used MODERN PACKAGING exclusively to carry their messages to the packaging field!

Q. Which packaging magazine presents the greatest amount of helpful advertising messages?

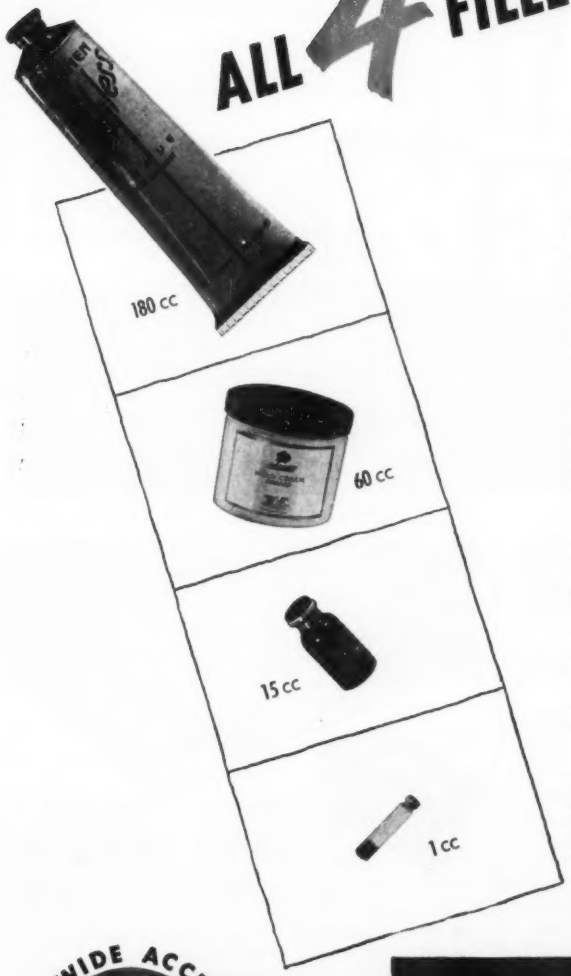
A. Again the answer is MODERN PACKAGING! The record shows that in 1950 MODERN PACKAGING carried greater advertising volume than three of the other four magazines combined and twice as many pages as the second ranking publication!

Q. Which of the magazines is the oldest and most influential in the field?

A. The records show that before the first issue of MODERN PACKAGING, back in 1927, packaging was not clearly recognized as one of the greatest single factors in modern merchandising and distribution. MODERN PACKAGING pioneered that idea and has been largely responsible for establishing packaging operations on a sound and scientific basis.

If you make anything that packagers buy, you'll want to know more about MODERN PACKAGING *as an advertising medium: who it reaches, how it stimulates buying action, how much it costs to deliver your sales messages in it. Just write to Advertising Department,* MODERN PACKAGING MAGAZINE, *575 Madison Avenue, New York 22, N. Y.*

ALL 4 FILLED ON 1 ARENCO



● Where speed, cleanliness and accuracy are required, the Arenco Filler cannot be surpassed. Whether you're packaging water-thin suspensions of antibiotics, medium viscosity creams or heavy non-flowing compounds, they all can be handled efficiently by the Arenco.

Not only is the Arenco versatile in the range of products it fills, but it fills an extreme range of containers as well—from tiny 1 cc vials to giant 250 cc (8¾ ounce) tubes.

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Accuracy Even when the smallest quantities are being filled, the Arenco maintains the high degree of accuracy for which it is world famous. Recent tests on filling 1 cc ampoules show accuracy to ±1%. "Give-away" on larger fills is even less.

Service The same organization which services 2,000 other Arenco machines in all parts of the country is available to service your Arenco filler. Competent mechanics and complete stocks of spare parts are always on hand. The nearest Arenco representative can supply full details. Contact him now.

Hopper or filling head to fit product. No container, no fill. Automatic cleaning and cap tightening for tubes.

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INCORPORATED
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King & Anderson, 1355 Market St., San Francisco 3, California
Tom McLay, P. O. Box #14, Port Deposit, Maryland
Packaging Equipment, Inc., 2013 Olive St., St. Louis 3, Missouri
Burnard C. York Packaging Machinery, 5807 W. North Ave., Chicago 39, Ill.
Canada: Richardson Agencies, Ltd., 454 King St., West Toronto

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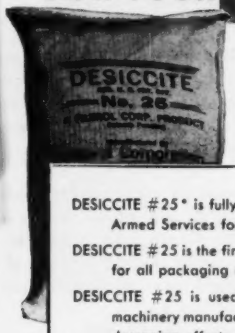
Sales Office: 398 Broadway, New York City

FOR YOUR Method-II PROTECTIVE PACKAGING REQUIREMENTS



DESICCITE #25* is fully approved by all branches of the Armed Services for use in Method-II packaging.

DESICCITE #25 is the finest dehydrating agent (desiccant) for all packaging requirements.

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Dry pack with DESICCITE #25

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General Offices: 727 West Seventh St., Los Angeles 17, Calif.

Department 6

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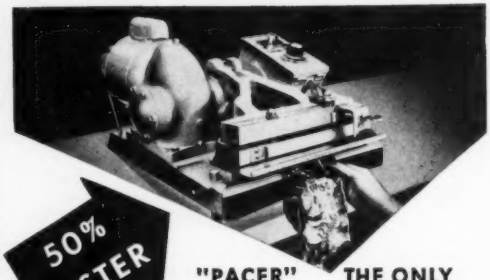

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"PACER" THE ONLY
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THAT OFFERS ALL THESE FEATURES:

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Automatic and Foot Power Heat Sealers; Rotary Heat Sealers; Hand Sealing Irons; Bag Making Machines.

WRITE FOR CATALOG

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DIV. OF GLOBE PRODUCTS—HEAT SEAL CORP.
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The Most Important Man in Your Business

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The same care should be given your selection of a shipping container. No matter how well your product is made — if it doesn't reach your customer in good condition — all previous effort is wasted.

For years, Gaylord boxes have been protecting the products of many of the country's leading manufacturers.

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EMPLOYMENT • BUSINESS OPPORTUNITIES • EQUIPMENT (used or resale only)

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FOR SALE: 1-Pneumatic Scale Packaging Unit, including Tight Wrap, 32 per minute. 1-Self adjusting Standard Knapp Gluer-Sealer & Compression unit, minimum carton 8¾" long x 5½" wide x 5¼" high, maximum 15¾" x 11½" x 8¼"; 2-Ceco Adjustable Carton Gluer Sealers Model A3901-12; 8-Pneumatic Scale Pouch type Tea Bag Machines; 1-Knapp 3B Wraparound Labeler; Pony M, ML, MX Labelrites; Standard Knapp adjustable type D Wraparound Labeler; Burt AU Adjustable Wraparound, World Improved, Model CH & Model S Spot Labelers; Miller MP817, MPUS Cellophane Wrappers; Stokes & Smith S-S G-1 Powder Filler. Only a partial list. Send us your inquiries. Consolidated Products Co. Inc., 16-20 Park Row, New York 7, N. Y., Phone: BArclay 7-4600.

FOR SALE: ROTOGRAVURE PRESS. 3 color 9" Champlain. Can be seen in operation. Reasonable. Reply Box 201, Modern Packaging.

NEW—NEVER UNCRATED: Battle Creek Wrapping Machine Company's Completely Automatic Production Line

Consisting Of: Carton Bottom Sealer Liner Closure & Top Sealer • Three Volumetric • 2 Stage Fillers • Conveyors • Top Roll Closure & Carton Top Sealer

What It Does: Automatically forms, lines, and fills cartons and seals top. Handles any free flowing, dry material such as pie mix, rice, etc. Reply Box 200, Modern Packaging.

FOR SALE: 1 Model 88MLLX Pony Labelrite Machine, complete with motor, stainless steel rollers and glue pot. Machine has never been used and is available for immediate delivery. Box 202, Modern Packaging.

FOR SALE: Staude General Gluer with all attachments. A-1 condition. May be seen in operation until July 1st. Box 203, Modern Packaging.

FOR SALE: PNEUMATIC 4-SCALE NET WEIGHER Machine used only two years. Ideal for free flowing material such as rice, beans, granular soaps, etc. Can be bought at tremendous saving. Ravarino & Freschi, Inc., 4651 Shaw Blvd., St. Louis 10, Missouri.

FOR SALE: 1-Rotary Beater and 1-Straight Edge Beater for rigid acetate box fabrication. Excellent condition. Priced for quick sale. Box 208, Modern Packaging.

FOR SALE: Rutherford #10 coating machine 44" wide, in excellent condition. For coating sheet metal. For use in the metal can or metal sign industry. Includes 10 gelatin covered applicator rolls. Priced very low for immediate sale. Write for photograph and any other information desired. Orchard Paper Company, 3914 Union Blvd., St. Louis 15, Mo.

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AT GREAT SAVINGS

International S.S. Straightline 160/min. Vacuum Filler.
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New Way MH Wraparound Labeler.
Pony ML and MX Labelrites.
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Amsco and Doughboy #46 Bag Sealers.
Triangle Elec-Tri-Pak G2c, A6CA Fillers.
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Knapp 429 and Ceco Carton Closers.
Pneumatic Scale Auto Tite-Wrappers.
Redington and R. A. Jones Automatic Cartoning Units.
Haysaen 3-7, Package CA2 and DF, Scandia Auto. Cellophane Wrappers.

This is only a Partial List
Tell Us Your Requirements

Union Standard Equipment Company
318-322 Lafayette Street
New York 12, N. Y.

HELP WANTED

SALESMAN WANTED — Nationally known cellophane converter is interested in filling a vacancy in Metropolitan New York area. Prefer man with cellophane experience but will consider man with other packaging material experience. Send application to Box 209, Modern Packaging.

WANTED: Paper Box Designer with experience and creative ability in set-up, folding and display boxes by well-established Upper Midwest paper box plant. This position offers steady employment, good pay and outstanding opportunity. State experience in full detail and salary expected. Box 204, Modern Packaging.

NATIONALLY known manufacturer of filling, labeling and packaging equipment requires well established representatives in Canada, Middle Atlantic States and other parts of the U. S. Representatives must have packaging experience and carry allied lines to ours. Write today for full particulars. Box 205, Modern Packaging.

SALESMAN WANTED: Experienced Folding Carton Salesman wanted for Chicago Territory. Apply in writing to Consolidated Paper Co., Monroe, Michigan.

SALESMAN WANTED: Experienced Folding Carton Salesman wanted for New York City Territory. Apply in writing to Consolidated Paper Co., Monroe, Michigan.

PRODUCTION MANAGER: Manufacturer with $3,000,000 annual sales and nationwide distribution—located Middlewest—looking for man experienced in waterproof caseliner and specialty kraft bag fabrication. Salary open plus bonus. Box No. 212, Modern Packaging.

SITUATIONS WANTED

PACKAGE DEVELOPMENT ENGINEER: Young and energetic, with diversified experience, invites inquiries from New York City and vicinity. Good knowledge of packaging materials and machines. College graduate. Mechanical and industrial engineering background. Will consider position as consultant. Box 211, Modern Packaging.

MISCELLANEOUS

WANTED: 1-Model A and 1-Model B Transwrap Machines; 1-S & S G-1 Powder Filler; Ceco A3901-12 Sealer; Jones Cartoner to handle 4 x 4 x 10. Box 173, Modern Packaging.

WANTED: Plastic scrap and rejects in any form, Cellulose Acetate, Butyrate, Polystyrene, Vinyl Polyethylene, etc. We pay top prices for clear, colored and printed scrap in any quantity. Box 174, Modern Packaging.

WANTED: Ceco Cartoning machine late model 40 or model 45 glued ends. Give particulars, including length of compressor units, price, and where it can be inspected. Will consider other machine performing same function. Reply Box 207, Modern Packaging.

WANTED: Established national sales organization now handling its own product only, wishes to add one or two established products for promotion of sales, preferably in the eastern part of the country. Reply Box 206, Modern Packaging.

FOR SALE: Cellophane bags-unprinted—we have some excess stock for 3¼-3½-4½-4½-5-5½-6½" wide bags—flat or gusset—any length up to 11½" delivery immediately—other sizes, future delivery—competitive, quality product—Write: Box 210, Modern Packaging Corp.

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Wool
20
Colors

Flock

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World's Largest Manufacturer of Flock
CLAREMONT, NEW HAMPSHIRE

"RED" sez:

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FOR SALE

metal decorating and tin lithography plant

Coating Department

1 Fuchs & Lang roll coater Type 8-36—motor driven; with 3 feed cans; 6 gum roller stocks; electric eye counter; attached to
1 Phoenix gas baking oven with Wheelco Flam-O-Trol model 1101-A controls
1 Fuchs & Lang Coater—9″ x 31″
4 Bowser Fig. 109 steel oil storage tanks with hand pumps; 12″ track and chain hoist.
1 Day 20″ paint mill
1 Abbe ball mill—30″ diameter x 24″
1 Bowser agitator tank—36″ x 32″ with #129 pump
And accessories

Litho Department

1 Fuchs & Lang Rotary Metal Decorating Press—26 x 36″
1 Young Gas Baking oven—50 ft.
1 Fuchs & Lang Rotary Metal Decorating Press—26 x 36″
1 Young Gas Baking Oven—40 ft.
Each oven complete with Bristol Thermometer controller—model 377 automatic over-drive motors; recirculating fans, etc.
And accessories.

Photographic and Plate Departments

1 "Directoplate" Planograph Camera "ROP" with 2 way multiple negative attachment; MF-C curtain masking frame; copyboard and copyboard carriage; negative centering and tilting bar; wall section; extension bellows and case for same.
1 Econogroup "Commercial" Photo Composer for press plate size 32 x 38, complete with G.E. timer control Macbeth arc lamp
1 Huebner "Econogroup" register device and retouching table
1 Huebner "Commercial" whirl coater 55″ complete with motor, heaters, etc.
And the necessary accessories such as arc lamps, ink tables, sinks, chemicals, Refrigerator, etc.

Japan Department

1 "Oven Equipment" Automatic dip tank and drying oven with fan and motor; double chain; 38″ spacing, bar type and 5 HP Westinghouse.

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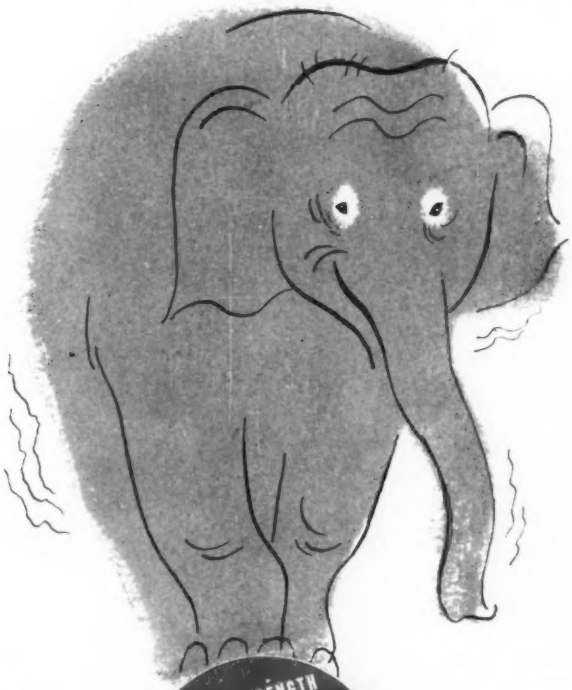

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